

**INSTRUCTION MANUAL**  
**TX1336**

# ***Terminix***

# ***Termite Control***

# ***Vehicle***



**MANUFACTURED FOR TERMINIX**



Rev:0.3  
6/21/13

# Safety Precautions



**WARNING:** Misuse of the equipment can cause it to rupture, malfunction, or start unexpectedly. Serious injury could result.

- This equipment is for use only by authorized Terminix service professionals.
- Read all instructions, tags, and labels before operating the equipment.
- **ALWAYS** use the equipment only for its intended purpose. If you are uncertain about usage, contact Wanner Engineering at 612-332-5681.
- **NEVER** alter or modify this equipment. Use only genuine Wanner replacement parts and accessories.
- **ALWAYS** check the equipment at the start of each work day. Repair or replace worn or damaged parts immediately.
- **NEVER** exceed the maximum working pressure (150 psi).
- **ALWAYS** route the hoses away from traffic areas, sharp edges, moving parts, and hot surfaces.
- **NEVER** expose the hoses to temperatures above 180° F or below -40° F.
- **ALWAYS** use fluids or solvents that are compatible with the equipment wetted parts. Refer to the Terminix manual. Read all fluid and solvent manufacturers' warnings.
- **ALWAYS** wear appropriate personal protective equipment when operating this equipment.
- **ALWAYS** comply with all applicable local, state, and national fire, electrical, and other safety regulations.

## Important Precautions

**Freezing conditions.** Protect the pump from freezing. See also the Maintenance Section.

Consult the Factory for the following situations:

- Extreme temperature applications (above 160° F or below 40° F)
- Pressure feeding of pumps
- Viscous or abrasive fluid applications
- Chemical compatibility problems
- Hot ambient temperatures (above 110° F)
- Conditions where pump oil may exceed 200° F because of a combination of hot ambient temperatures, hot fluid temperature, and full horsepower load – an oil cooler may be required

**Failure to observe precautions during freezing conditions will result in severe damage to the Pest Control System.**

**Adequate Fluid Supply.** To avoid cavitation and premature pump failure, be sure that the pump will have an adequate fluid supply and that the inlet line will not be obstructed. See "Inlet Piping."

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# How the System Works

The Termite Control Vehicle System is a service module that is sized to fit in a pickup truck box, and is used by Terminix Universal Technicians when performing their service procedures.

The system consists of:

- A tank, a pump system, and a hose reel module, all installed in a pickup truck box
- A storage container for liquid termite control products, dusts, and application equipment
- A storage container for bait products and applications equipment
- A topper with three access doors
- Switches, relays, and a fused wiring harness to connect the various electrical components

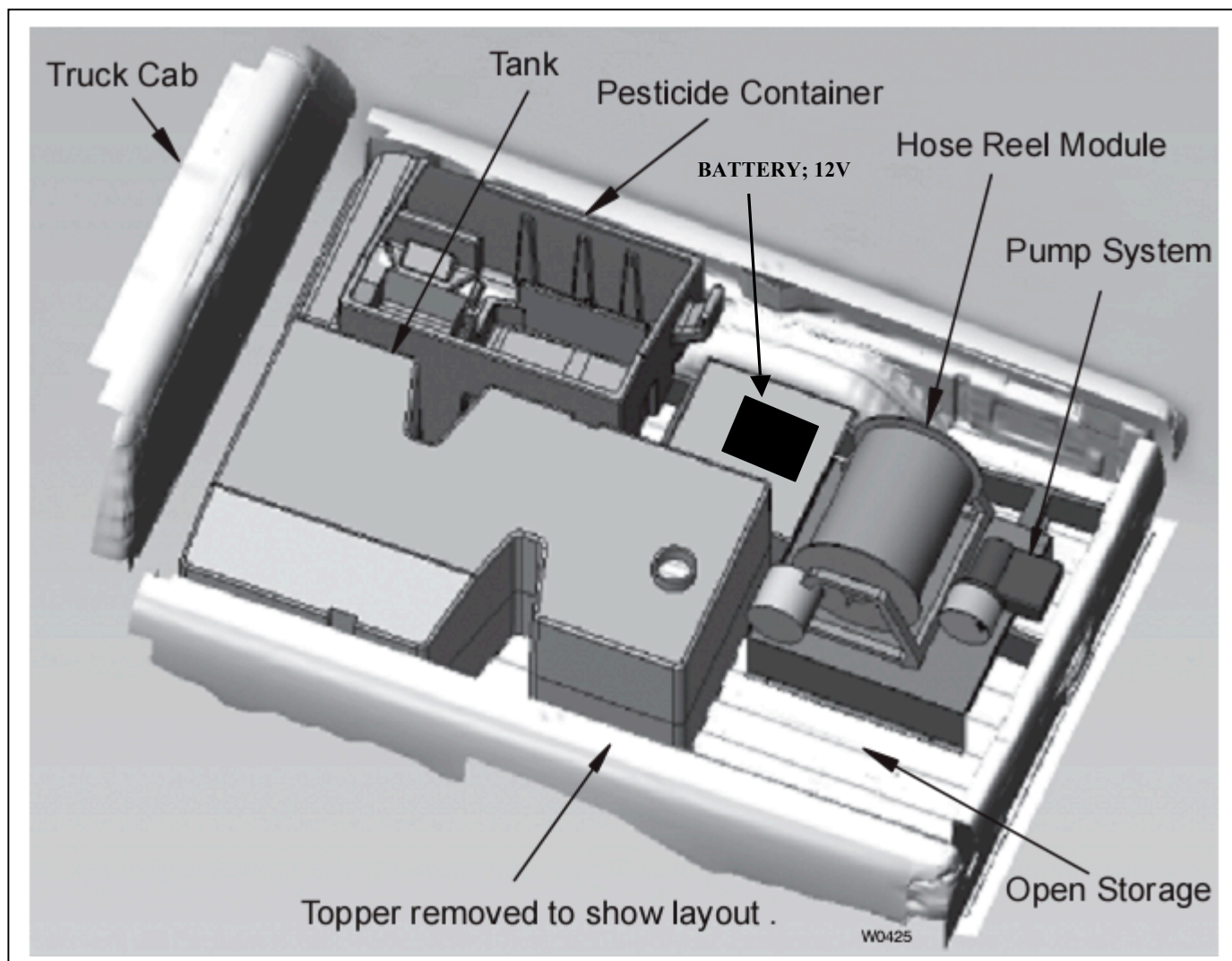
- Personal protective equipment storage, located in the cab of the vehicle
- A battery voltage protection system
- A rear view monitor

The tank module includes a 50 gallon liquid tank with a pump and hose reel for applying liquid termite control products.

The pump system is powered from the truck's 12 volt DC power. The switch inside the rear door of the topper is the main power selector switch (pump or hose reel operation).

The system includes a 300 foot treatment hose (on an electric-rewind reel) that is connected to an application gun with a quick-disconnect.

## System Component Identification



# How the System Works

## Battery Voltage Protection System

The Termite Control Truck has an integrated battery voltage protection system to prevent over discharge of the truck's battery. If the battery voltage drops below 12 volts for more than 4 minutes, the system automatically disconnects the pump system and hose reel module, to allow enough power to start the engine and charge the battery. The system is reset by pressing the reset switch on the dash, or when the charging voltage of the pickup truck reaches 13 volts.

## Rear View Monitor

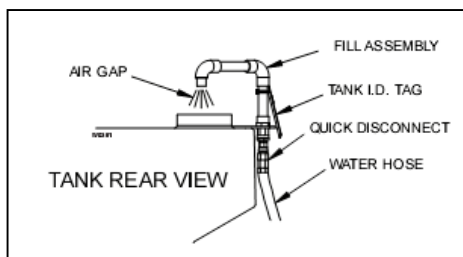
The Termite Control Pickup Truck has an LCD monitor mounted on the dash in the cab which shows a view of the area behind the truck. The display can be turned on whenever the ignition is on and shuts off when the ignition is turned off. Momentarily pressing the power switch when it is turned on will dim the display at different levels. Holding the power switch down for a few seconds will turn it off.

# Operation

## Adding Water To the Tank

Remove the tank cap. Connect the Terminix-supplied garden hose to the fill assembly (attached to the tank), and fill with water to the desired level. **Monitor the fill process at all times, and shut off the water when the desired level is reached.** Level marks on the tank indicate the fluid volume. Reattach the cap when full.

**Do not remove** the fill bracket and associated plumbing. They prevent possible back flow into the water supply.



# Operation

## Main Power Switch

All power to the system is controlled by a three position switch located inside the rear door of the topper:

**Up.** Power is applied to the hose reel push button.

**Center.** Power is turned off.

**Down.** Power is applied to the pump.

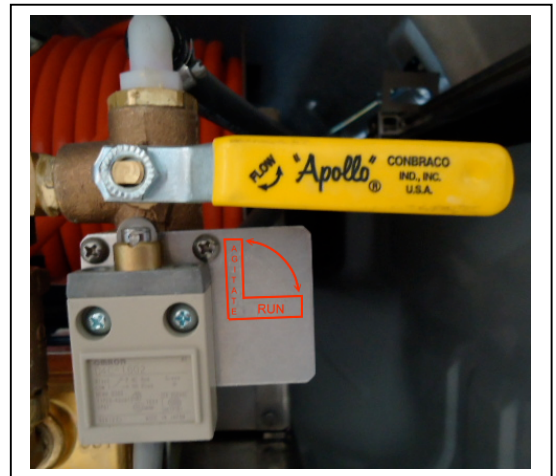
The pump and hose reel cannot be powered simultaneously, to prevent too much battery current at one time.



**CAUTION:** Failure to shut off power may discharge the truck's battery.

## Operating Pump In "Run" Mode:

To operate the pump in "Run" mode, first move the yellow handled ball valve to the "Run" position. Next, move the Power Select Switch down to the "Pump" position. The pump will run until the system reaches its maximum pressure setting (110 psi) and will not come on again until the system reaches the minimum pressure setting (80 psi).



## Fluid Counter

Operating the pump in the "Run" mode activates the fluid counter. The fluid counter has three different displays: JOB TOTAL, DAILY TOTAL, and TOTAL. Both JOB TOTAL and DAILY TOTAL screens can be cleared by pressing the reset button in the lower right corner of each display. The TOTAL screen can not be reset.

**JOB TOTAL**

**DAILY TOTAL**

**TOTAL**



# Operation

## Fluid Counter Programming

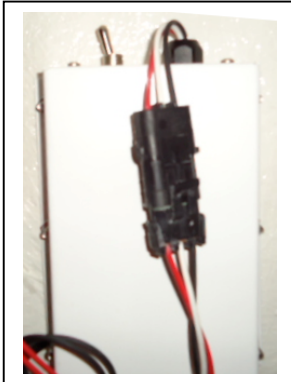
Each fluid counter has been preset at the factory. However, a “bucket” check should be performed to ensure accuracy. If a programming change is necessary, follow the steps shown below.

**Note: Each of the three counters has four program-mode screens.**

PROGRAMMING SCREENS	
SCREEN	FUNCTION
1	COUNT SCALE FACTOR
2	COUNT DECIMAL FACTOR
3	RESET TO OFFSET VALUE
4	RESET KEY ENABLE/DISABLE

1. Locate Toggle Switch at top of Fluid Counter Assembly behind topper rear panel.
2. Enter Setup Mode by setting Toggle Switch ON (away from wire connector).

Away from wire Connector



Toward wire Connector

Upon entering Setup Mode, the counter will display Screen 1. Press and hold the Programming Button (left button) while repeatedly pressing the Reset button to advance to successive screens.

3. The scale factor is factory set to 00.0102.
4. Set decimal point to 000.00.
5. Leave offset value at default (0000.00).
6. Exit Setup Mode by setting Toggle Switch to OFF (toward wire connector).

## Operating Pump In “Agitate” Mode:

To operate the pump in agitate mode, first move the yellow handled ball valve to the “Agitate” position. Next, move the Power Select Switch down to the “Pump” position. All pump flow returns to the tank through an agitator. Agitating the tank should be done prior to each job to insure that the chemical is properly suspended.



## Operating The Hose Reel



**CAUTION:** The reel retracts rapidly! To prevent injury to yourself and others, or property damage, make certain the hose will not become entangled as it is retracted. Guide the hose securely with a gloved hand while operating the reel switch. Stay clear of moving parts.

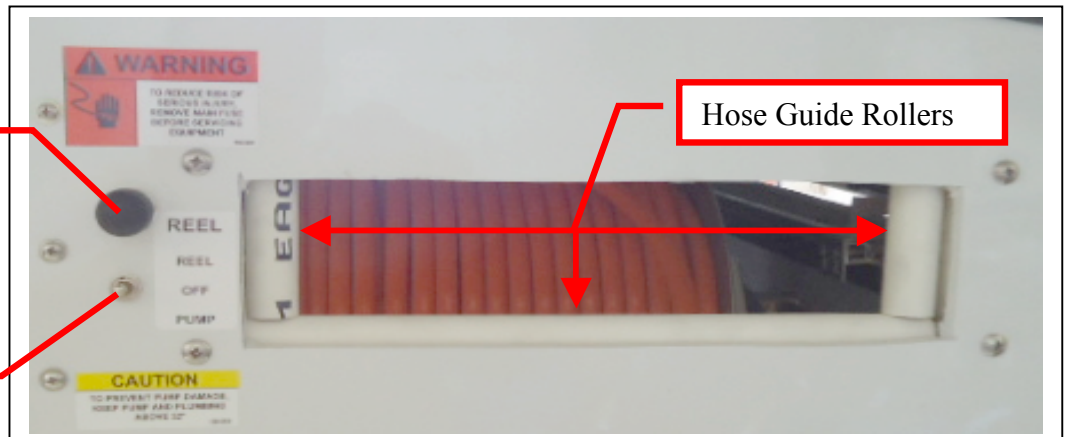
To reel out the hose, simply pull it out through the guide at the back of the topper. The hose extend 300 feet.

To reel in the hose, move the main power switch **up** to the “Reel” positions and hold in a push button switch at the back of the topper. With a gloved hand, hold back lightly on the hose as it retracts, and guide it in to ensure that it rewinds evenly across the reel.

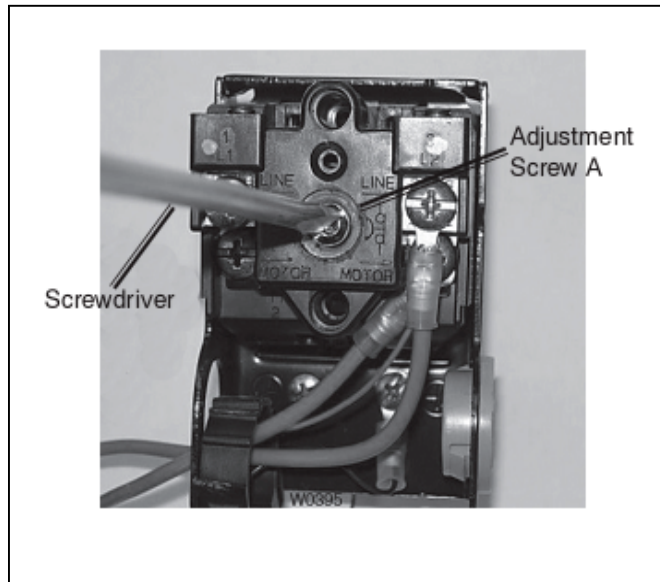
Reel Pushbutton Switch

Power Select Switch

Hose Guide Rollers



# Operation



## Pressure Switch Adjustment

The pressure switch will shut the pump off when not spraying.

The pressure switch is set to cut-in at 80 psi and cut-out at 100 psi. To adjust this setting turn the Main Spring Adjustment Screw "A" clockwise to increase both cut-in and cut-out pressure settings. The differential setting will vary from 15-25 psi and is not adjustable. The minimum cut-in pressure is 60 psi and the maximum cut-out pressure is 110 psi.

## Preparing A Tank Dilution (for an empty tank)

1. In most instances, a mix will be added to an empty tank. Remove the fill cap, and connect the Terminix-supplied garden hose to the fill assembly quick-connect. **Monitor the fill process at all times**, and shut off the water flow when the tank amount reaches the desired level. In this instance we will assume that a full 150 gallon mix is being prepared: fill the tank to the 150 gallon mark.
2. Refer to the product label for information about the dilution rate for the type of application intended. The label will indicate the amount of product (concentrate) to mix with each gallon of water. This amount will be in fluid ounces or milliliters.
3. For this example, measure the amount of concentrate required for 150 gallons (568 liters) of mix. Wear appropriate personal protective equipment as directed by the product label.
4. Add the measured amount of concentrate to the tank.
5. Triple-rinse the measuring container, and add the rinsate to the tank.
6. Reattach the fill cap.
7. Turn the pump on by placing the main switch in the down position.
8. Allow the pump to recirculate the tank mix for at least 5 minutes.
9. Verify that the product I.D. tag is attached to the tank, and that it has the correct product name and percentage ratio.  
**If there is no product I.D. tag, add a tag with the correct product name and percentage ratio. Black labels are supplied on the last page of this manual.**

## Adding To An Existing Tank Dilution (partially filled tank)

1. In some instances, the tank mix will be prepared by adding water and product concentrate (the same product that is already in the tank) to a partially filled tank.
2. Begin by recording the amount of mix (in gallons) in the tank. For this example, we will assume that 8 gallons of mix is already in the tank.
3. Remove the fill cap. Connect the garden hose to the fill assembly. **Monitor the fill process at all times**, and shut off the water flow when the tank level reaches the desired level (for this example, 20 gallons).
4. Refer to the product label for information about the dilution rate for the type of application intended. The label will indicate the amount of product (concentrate) to mix with each gallon of water. This amount will be in fluid ounces or milliliters.
5. For this example: since the tank contained 8 gallons, the actual amount of new mix will be 12 gallons (20 minus 8). Measure the amount of concentrate required for 12 gallons (45 liters) of mix. The total amount of mix in the tank will now be 20 gallons. Wear appropriate personal protective equipment as directed by the product label.

# Operation

6. Add the measured amount of concentrate to the tank.
7. Triple-rinse the measuring container, and add the rinsate to the tank.
8. Reattach the fill cap.
9. Turn the pump on by placing the main switch in the down position.
10. Allow the pump to recirculate the tank mix for at least 5 minutes.
11. Verify that the product I.D. tag is attached to the tank, and that it has the correct product name and percentage ratio.

**If there is no product I.D. tag, add a tag with the correct product name and percentage ratio.**

**Blank labels are supplied on the last page of this manual.**

## Priming The Pump

Each time the tank is emptied or whenever air gets into the pump, the pump must be reprimed. This can be easily done through bypassing the flow to the tank,

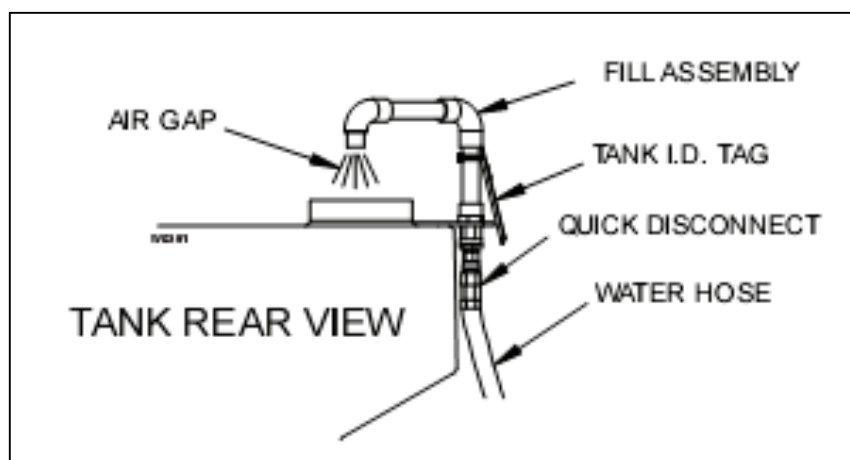
Make sure that there is adequate fluid in the tank, that the tank valve is open (at the filter), and that the application gun is close.

## Operating In Cold Weather

**CAUTION:** Never allow the pumps, plumbing lines and fittings, or tanks to freeze. Serious damage will occur.

A 1500 Watt, 120 Volt space heater is provided with the system, to minimize the possibility of freezing during short durations of freezing temperatures. Keep all doors closed while the heater is running, to optimize heating of the entire system.

**WARNING:** Run the space heater cord through the sides of the doors or the top of the tailgate, and allow extra cord length. Never run the cord on the side of the tailgate, or anywhere the cord could get pinched or cut. This could cause an electrical short or shock, and cause serious injury.





# Maintenance

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## Daily

### Hoses And Fittings

At the beginning of each workday, check all hoses and fittings in the system for signs of wear, kinking, abrasion, and leakage. Replace or repair as required.

### Tank Straps

At beginning of each workday, check the tank straps to insure they are tight. Check the webbing for signs of wear. Replace when necessary.

## Weekly

### Strainer

To keep the pump operating properly, check the strainer screen at least once a week. If clogged, clean or replace.

**IMPORTANT: Always keep spare gaskets on hand.**

1. Turn off the main power switch and the tank outlet valve.
2. Place a container below the strainer to catch spillage.
3. Remove the strainer bowl. Clean or replace the screen. Check the strainer gasket for wear, nicks, or other damage.
4. Reattach the strainer bowl. **Be careful** that the gasket and screen are properly seated to prevent damage or leaks.
5. Open the tank outlet valve.

## Monthly

### Pump

Check the oil level monthly. The oil level should be  $\frac{3}{4}$  in. from the top of the fill port (and must be above all metal parts of the pump). Use synthetic 5W30 oil.

Change the oil as specified in the pump Service Manual.



**CAUTION: If you are losing oil, but don't see any external leakage, or if the oil is discolored or contaminated, one of the diaphragms (17) may be ruptured. Refer to the Service Section. Do not operate the pump with a damaged diaphragm.**



**CAUTION: Do not leave contaminated oil in the pump or leave it empty. Remove contaminated oil as soon as possible and replace it with clean oil.**

## Annually

### Preventative Maintenance

**IMPORTANT: Always perform the following preventative maintenance procedures before storing the system at the end of the season.**

1. Check the pump diaphragms and valves if the pressure gauge becomes unsteady.
2. Change the oil if dirty or contaminated.
3. Check all electrical wires and connections for wear and corrosion. Clean the connections if necessary and apply silicone grease to prevent corrosion.
4. Lubricate the hose reel chain. Tighten it if necessary.
5. Lubricate and readjust the topper latches and locks. Refer to page 10.

### Winterizing The System

For long periods of non-use, it is best to store the unit wet to prevent dry-out and other problems:

1. Evacuate the tank by pumping the treatment fluid out through the application gun into appropriate container(s).
2. Pour enough nontoxic (RV; propylene glycol) antifreeze into the tank to allow the antifreeze to be pumped throughout the system.
3. Evacuate all treatment fluid from the treating hose by pumping fluid from the antifreeze tank into a bucket until there is a color change.
4. Pump the remaining fluid from the tank into a waste container. Dispose of it properly.

# Maintenance

Refer to the chart below for examples of high-quality lubricants and cleaners suitable for maintaining the Termite Control Vehicle System.

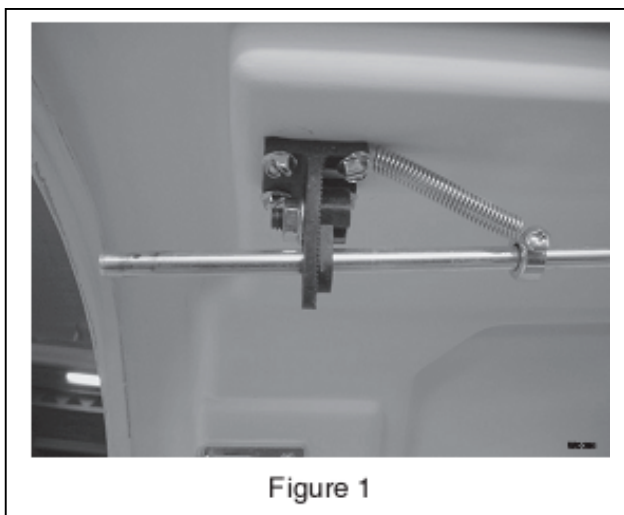
Lubricant Type	Examples of Products	Attributes Required; Uses
<b>High-Pressure Lubricant</b>	Zep #2000 High-Pressure Lubricant LPS Force 842	Clear, long-lasting lubricant that adheres to surfaces and resists throw-off and squeeze-out under extreme pressure, vibration, or repeated impact. Temperature range of -30° F to 600° F. Use on <b>reel chain, motor shaft, and sprockets</b> .
<b>Penetrating Lubricant</b>	Zep 45 NC Penetrating Lubricant LPS Magnum Teflon Lubricant	Rapidly penetrating, long-lasting, non-chlorinated lubricant that leaves a protective coating to retard corrosion and rust. Use on <b>all moving parts and surfaces, such as hinges, door locks, reel arms, and electrical plugs</b> .
<b>Long-Term Protective Coating</b>	Zep Iron Clad Coating LPS Hard Coat	Dries to form a transparent, wax like protective film that is self-healing and weldable. Provides long-term corrosion protection for ferrous and nonferrous metal surfaces, both indoors and outdoors. Lubricates and displaces moisture. Will not crack, peel, or sag, and has a temperature range of -40° F to 500° F. Use on iron, steel, copper, brass, aluminum, and painted surfaces, such as <b>motors, door hardware, and all other plated or painted surfaces</b> .
<b>Water-Resistant Grease</b>	Zep Lithium Water-Resistant Grease LPS Thermaplex Multipurpose Grease	Water-resistant grease combining lithium grease and polyethylene polymer, oxidation inhibitors, and extreme-pressure additives. Has a temperature range of 0° F to 250° F. Clings to metal and resists rusting and corrosion under severe wet operating conditions. Use on <b>hose reel swivels and other areas of metal contact such as lock latches</b> .
<b>Dielectric Grease</b>	Wanner #100-777 Dielectric Grease G.E. Dynatex (or equivalent)	Helps prevent corrosion and keeps moisture out of sensitive electrical connections. Has a temperature range of -40° F to 400° F. Use on the <b>electrical connectors between the controller and the module, motor terminals and connectors, battery terminals, etc.</b>
Cleaner Type	Examples of Products	Attributes Required; Uses
<b>Electrical Contact Cleaner</b>	Zep Elec-II Electrical Contact Cleaner LPS 4620 Contact Cleaner	Removes grease, oil, dirt, and lint from precision electrical parts. Evaporates quickly and leaves surface free of residue. Safe, nonflammable, and noncorrosive, with dielectric strength of 32,000 volts. Use on <b>controller components, electrical switches, etc.</b>
<b>All-Surface Cleaner</b>	Zep 40 Aerosol All-Surface Cleaner LPS V-Clean Surface Cleaner	Dissolves grease, surface smears, finger marks, and soil. Low-temperature formula eliminates cold-weather streaking problems. Use on <b>all surfaces on the System 11000, including fiberglass, stainless steel, rubber, and plastic parts, and decals</b> .
Filler Type	Examples of Products	Attributes Required; Uses
<b>Moisture-Resistant Filler</b>	Zep Fast-Caulk G.E. (or equivalent)	A white silicone rubber caulking and sealing compound that adheres to glass, nonoily woods, metal, porcelain, ceramic, painted surfaces, plastic, and rubber. Use on <b>any other area that requires a moisture-proof sealant</b> .

# Topper Maintenance

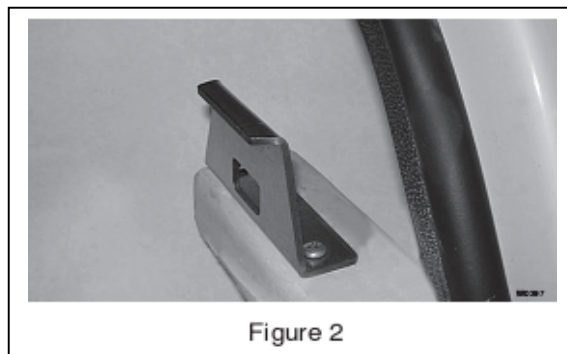
**NOTE:** It is important for all Terminix Branches that own and operate a Chevrolet 1500 based Termite Control Vehicle or Ford-Ranger-based Universal Truck System (also known as the Mantis Truck), **or** an Aardvark truck manufactured with pop-up style black T-handles, to regularly **inspect, lubricate, and properly adjust** the large “gull-wing” style doors on the driver and passenger side of the vehicle. Failure to do so can lead to difficulties with the latch function of the doors (in normal operation the doors latch automatically when they are slammed shut) and force the need to manually engage the latch each time the doors are closed. **Technicians should be alerted to manually check these doors to make sure they are latched (this can be done by lifting up on the door) before driving the vehicle.**

## Door Latch Adjustments

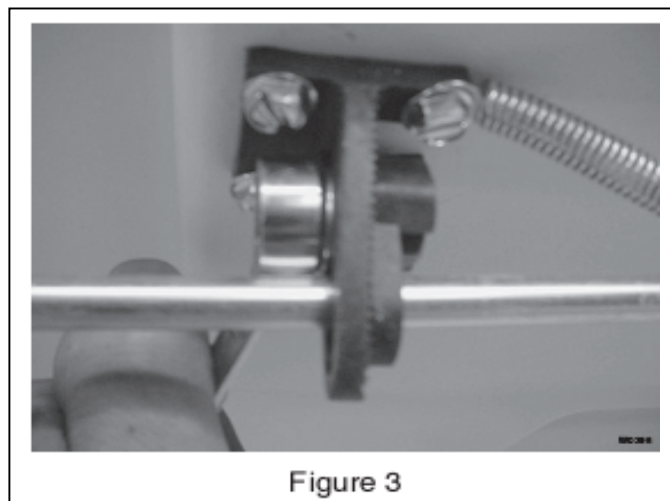
The latching mechanism of the gull-wing style doors is easily adjusted to ensure a smooth and easy latch each time the door is closed. An adjustable rod guide is shown in Figure 1.



This guide holds the rods in place so that they slide into latch shown in Figure 2 when the doors are closed. It is important that these rod guides are adjusted so that the rods fully engage the latches when the door is in its normal closed position.



Use a ½ in. box end wrench to adjust these rod guides as shown in Figure 3. The rod guides can be adjusted up and down. If the guide is adjusted too high (toward the door), the door will not latch. If the guide is adjusted too low (toward the truck bed), the door will slide into the latched position without pulling the door down into a seated and sealed position.



Adjust these rod guides so that the rods slide into place in the latch as the door is closed from the open position. You should not have to push on the door above the latches to make them slide into position. If you do have to push on the door, you should adjust the rod guides toward the truck bed to make sure they slide into place easily when the door is closed. Visually inspect the doors while they are down and locked to ensure that there are not excessive gaps around the door. **To test, pull up on each end of the door to check that it is latched.**

# Topper

# Maintenance

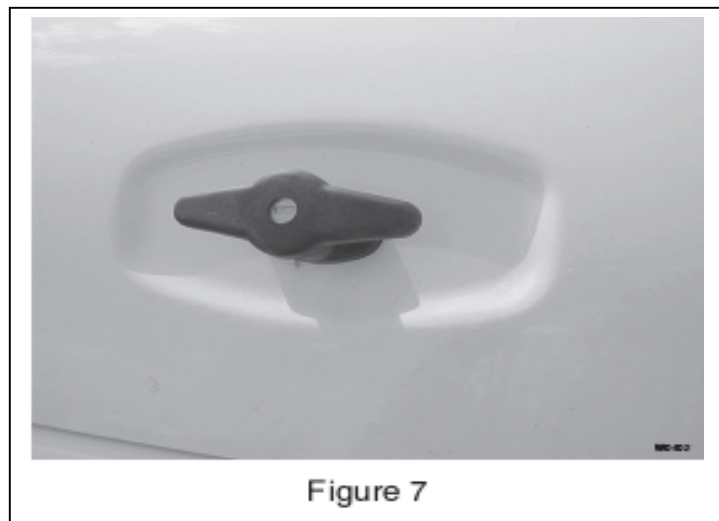
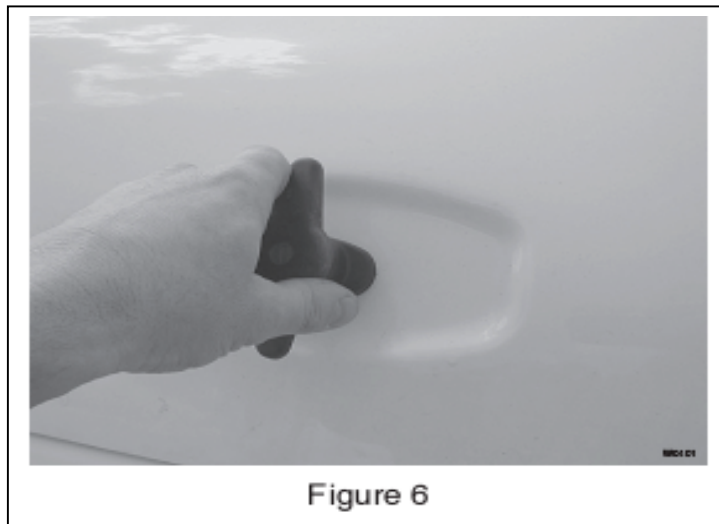
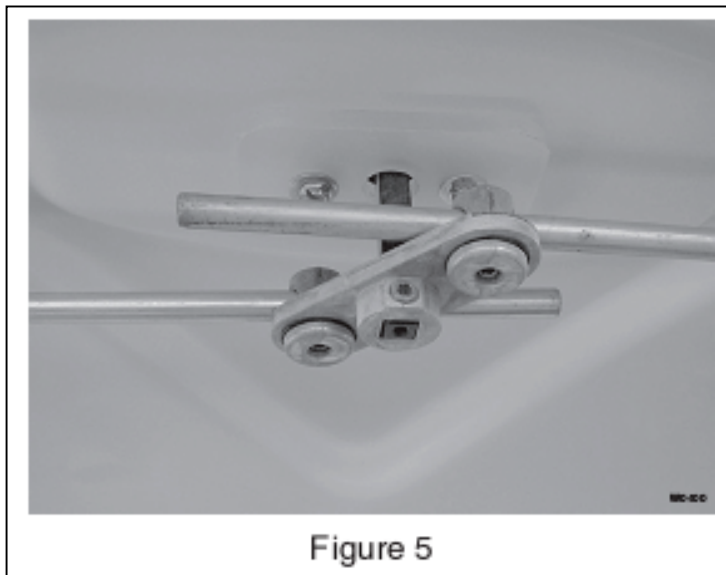
When properly adjusted, the door should close tightly and look like Figure 4.



Additionally, the Allen set screws on the T-handle cam assembly (Figure 5) should be checked and tightened periodically if needed, to ensure that the cam assembly is tight on the T-handle driver (the square rod coming from the back of the T-handle) and also tight on the rods.

## Lubrication and Spring Adjustment

The T-handle and adjustable rod guides are shipped from the installer lubricated and working smoothly. Over time, these components can become sticky in their movement and need to be lubricated. When turned to the vertical position (Figure 6), the T-handle should return to the fully horizontal position (Figure 7) by itself. **If it does not, the handle must be returned to this horizontal position (Figure 7) by hand to ensure that the door is latched in the down position. Always pull up on the door to confirm that it is latched, before moving the vehicle.**



# Topper Maintenance

To aid in the automatic return of the handle to the horizontal (locking) position, the center T-handle cam (Figure 8), and the adjustable rod guides (Figure 9) should be sprayed with WD-40 or similar aerosol-propelled petroleum-based lubricant once a week.



Figure 8



Figure 9

Turn the T-handle several times to ensure all moving parts are thoroughly lubricated. If the handle still does not return to the horizontal position (Figure 7) or does so slowly, you should adjust the return spring (Figure 10) to increase the return force it exerts on the rods.



Figure 10

To do this, firmly hold the mounting collar attached to the rod and use a Philips-head screwdriver to loosen the locking screw (Figure 11).

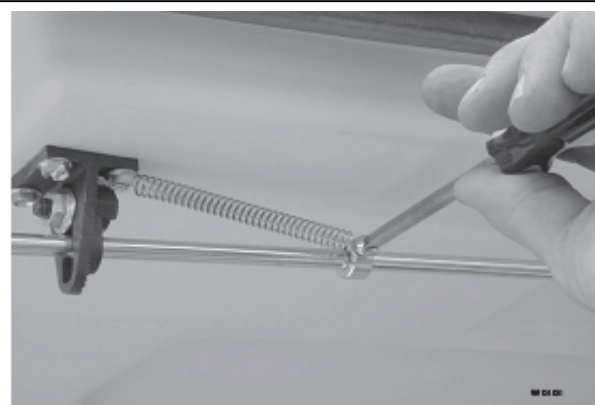


Figure 11

Move the mounting collar further toward the center T-handle cam (Figure 5) to stretch the spring further, and lock it into place on the rod by screwing down the locking screw. The spring should not be stretched to more than 4 in. from end to end (Figure 12).

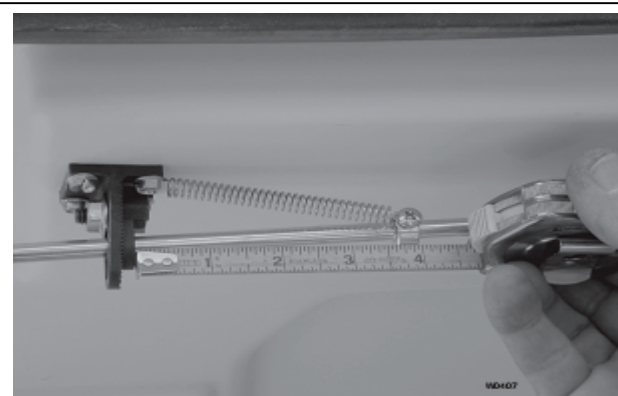


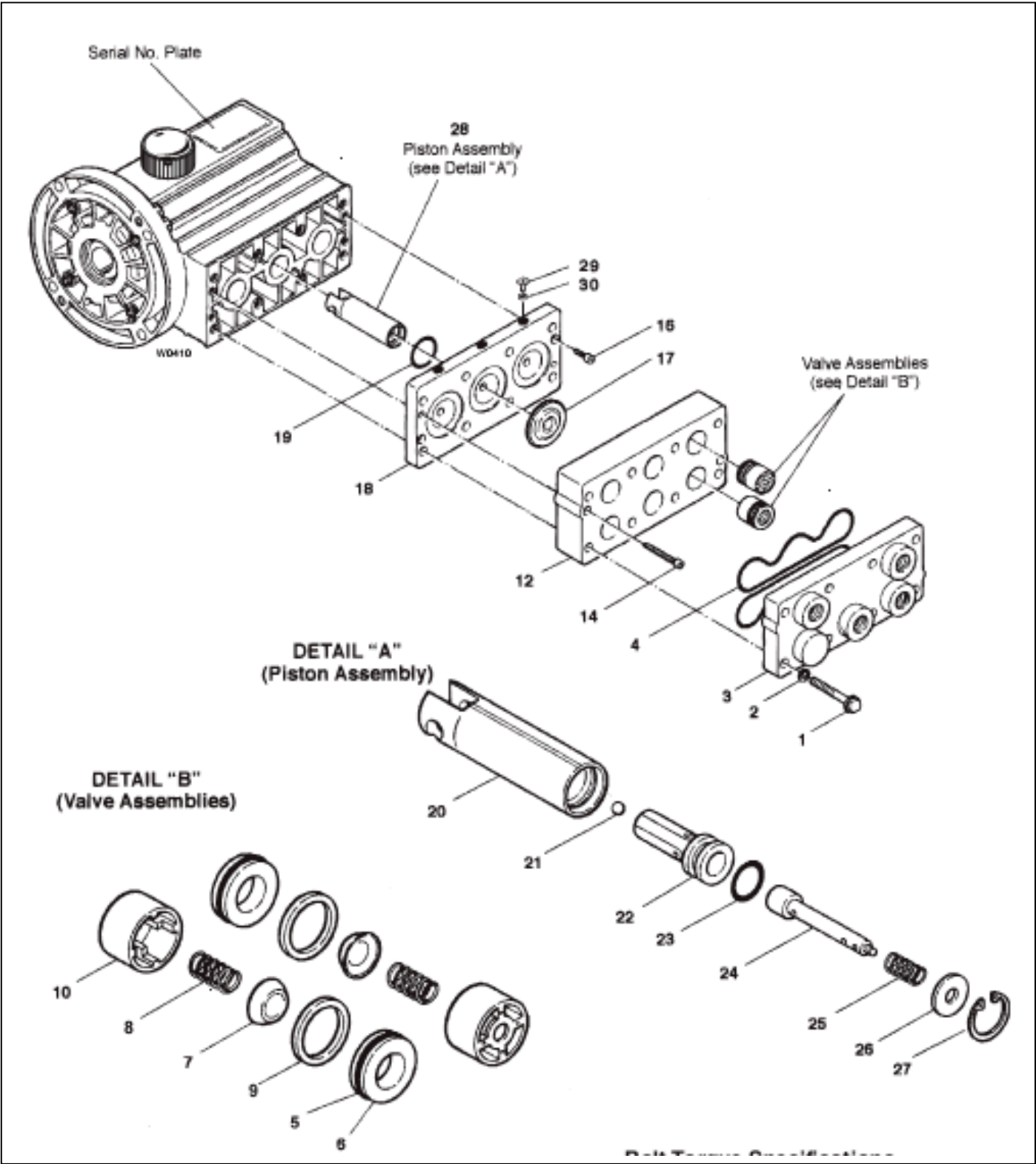
Figure 12

Turn the T-handle again to test its return to horizontal when released (Figure 7). If you have adjusted the spring to this 4 in. limit and have thoroughly lubricated the system, but the T-handle still does not return to the full horizontal position when released, please contact the topper manufacturer at the number below:

Glasstite, Inc.  
600 Highway 4, North  
Dunnell, MN 56127  
800-533-0450 ext. 179



# Pump Service (Fluid End)



Bolt Torque Specifications		
Ref. No.	Assembly Torque	
1	15 ft-lbs	20 Nm

# Pump Service (Fluid End)

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Item No.	Part Number	Description	Qty/Pump
1	D03-024-2010	Bolt, hex-head, 3" (for use with metallic head models)	8
2	C22-014-2000	Washer, 5/16" (metallic head only)	8
3	D03-004-1010	Manifold, brass	1
4	D25-073-2110	O-ring, manifold, Buna	2
5	D25-046-2110	O-ring, valve seat, Buna	6
6	D03-020-1002	Valve Seat, 17-4 SST	6
7	D03-021-1002	Valve, 17-7 SST, stamped	6
8	D03-022-3114	Valve Spring, Elgiloy	6
9	D03-092-2110	Tetra Seal, Buna	6
10	D03-023-2310	Retainer, valve spring, Celcon	6
12	K03-003-1020	Valve Plate, brass	1
14	D03-029-2010	Cap Screw, socket-head, 1"	2
16	D03-088-2010	Cap Screw, socket-head, 3/4"	2
17	K03-018-1240	Diaphragm, Buna-N-XS	3
18	K03-002-1022	Diaphragm Plate	1
19	D03-075-2110	O-ring, diaphragm plate, Buna	3
20	K03-014-1004	Piston	3
21	D10-015-3010	Ball	3
22	K03-043-1010	Valve Cylinder	3
23	C23-009-2110	O-ring, valve cylinder, Buna	3
24	K03-044-1010	Valve Plunger	3
25	K03-045-3110	Spring, sleeve valve	3
26	K03-049-1000	Washer	3
27	D03-048-2210	Snap Ring	3
28	D03-014-1210	Piston Assembly	3
29	D10-030-2010	Screw, #10 UNF, SST	3
30	102-210	O-ring, Buna-N	3
-	-	Wrench, Hex, 5/64"	-
-	A03-175-1106	Tool Kit, D-03, M-03, G-03, D-04, G-04	-
-	A03-125-1020	Holder, Plunger	-

# Pump Service (Fluid End)

**NOTE:** The numbers in parentheses are the Ref. Nos. on the illustrations in the parts drawings.

This section explains how to disassemble and inspect all easily-serviceable parts of the pump. Repair procedures for the hydraulic end (oil reservoir) of the pump are included in a later section of the manual.

**CAUTION:** Do not disassemble the hydraulic end unless you are a skilled mechanic. For assistance, contact Wanner Engineering (Tel 612-332-5681 or Fax 612-332-6937) or the distributor in your area.

## 1. Remove Manifold (3), Valve Plate (12)

- Remove all eight bolts (1) around the manifold.
- Remove the manifold (3).
- Inspect the manifold for warping or wear around the inlet and outlet ports. If wear is excessive, replace the manifold.

To check if the manifold is warped, remove the O-rings (4) and place a straightedge across it. A warped manifold should be replaced.

- Remove the two socket-head cap screws (14).
- Inspect the valve plate in the same manner as the manifold.

## 2. Inspect Valves (5-11)

The three inlet and three outlet valve assemblies are identical (but face in opposite directions). Refer to the location drawing above. Inspect each valve as follows:

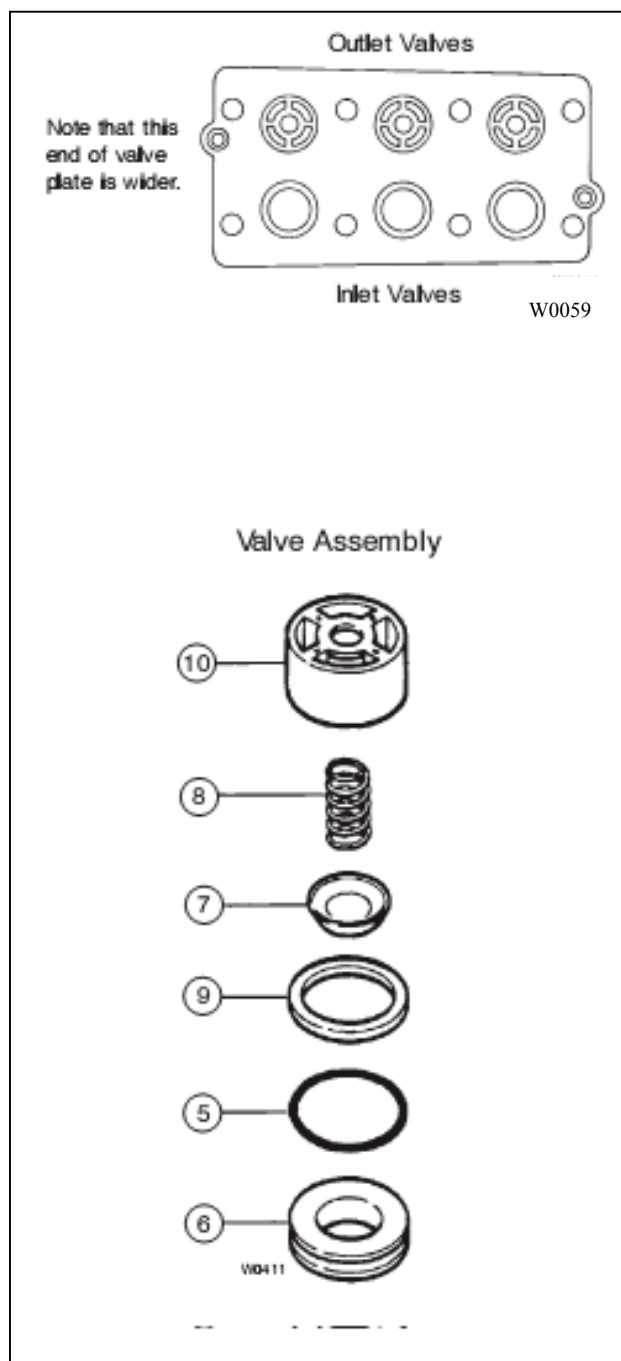
- Check the spring retainer (10), and replace if worn.
- Check the valve spring (8). If it is shorter than a new spring, replace it (don't just stretch the old spring).
- Check the valve poppet (7). If worn excessively, replace it.
- Remove the valve seat (6). A seat remover is included in the Wanner Tool Kit.

Inspect the valve seat for wear, and replace it if necessary. A new O-ring (5) should be installed.

- Reinstall the valve assemblies:
  - Clean the valve ports and shoulders with emery cloth, and lubricate them with lubricating gel or petroleum jelly.
  - Install the O-ring (5) on the valve seat (6).
  - Inlet (3 lower valves in the location drawing).**  
Insert the spring retainer (10) into the valve plate, then insert the spring, valve, Tetra seal and valve seat (8, 7, 9, and 6). A flat O-ring [Tetra seal] (5) goes between the retainer and seat.

- Outlet (3 upper valves in the location drawing).** Insert the valve seat, Tetra seal, valve, and spring, then the retainer. Install the flat O-ring between the retainer and the seat.

### Installing Inlet and Outlet Valve



# Pump Service (Fluid End)

---

## 3. Inspect and Replace Diaphragms (17)

- a. Lift a diaphragm by one edge, and turn the pump shaft until the diaphragm moves up to “top dead center.” This will expose machine cross holes in the plunger shaft behind the diaphragm.

**NOTE:** If the pump has a hollow shaft, use the shaft rotator from the Wanner Tool Kit.

- b. Remove the three flat-head screws (30) and O-rings (29) from the edge access holes in the diaphragm plate (18). Insert a 5/64” hex allen wrench into one of the holes in the diaphragm (17) until the front cross-hole in the valve plunger spool (24) lines up and allows the allen wrench to pass through. (Don’t remove the allen wrench until the new diaphragm is installed in step “g” below.)
- c. Unscrew the diaphragm. Use a 5/16 in. (8 mm) open-end wrench, and turn counterclockwise.
- d. Inspect the diaphragm carefully. A ruptured diaphragm generally indicates a pumping system problem, and replacing only the diaphragm will not solve the larger problem. Inspect the diaphragm for the following:
  - **Small puncture.** Usually caused by a sharp foreign object in the fluid, or by an ice particle.
  - **Diaphragm pulled away** from the sides. Usually caused by fluid being frozen in the pump, or by over pressurization of the pump.
  - **Diaphragm becoming stiff** and losing flexibility. Usually caused by pumping a fluid that is incompatible with the diaphragm material.
  - **Diaphragm edge chewed away.** Usually caused by over pressurizing the system.

**CAUTION:** If a diaphragm has ruptured and foreign material or water has entered the oil reservoir, do not operate the pump. Check all diaphragms, then flush the reservoir completely (as outlined below) and refill it with fresh oil. Never let the pump stand with foreign material or water in the reservoir, or with the reservoir empty.

- e. Clean away any spilled oil. Apply Loctite #242 Threadlocker to the screw of the new diaphragm (or the old one, as appropriate).
- f. Install the diaphragm and tighten to 10 in.-lbs (110 N-cm).
- g. Remove the hex allen wrench.
- h. Repeat the above inspection procedure (and replacement, if necessary) with the other two diaphragms.

## 4. Flush Contaminant from Hydraulic End (only if a diaphragm has ruptured)

- a. With the valve plate and manifold still removed (see above), remove the oil drain cap (60) and allow all oil and contaminant to drain out.
- b. Fill the reservoir with fresh oil, manually turn the pump shaft to circulate the oil, and drain once again.
- c. Refill the reservoir. If the oil appears milky, there is still contaminant in the reservoir. Repeat the flushing procedure until the oil appears clean.

## 5. Reinstall Valve Plate (12), Manifold (3)

- a. Reinstall the valve plate (12), with the valve assemblies installed as outlined above, onto the diaphragm plate (18).
- b. Reinstall the O-rings (4) on the rear side of the manifold. Use petroleum jelly or lubricating gel to hold them in place.
- c. Reinstall the manifold onto the valve plate.
- d. Insert all bolts (1), with washers (2), around the edge of the manifold, and alternately tighten opposite bolts until all are secure. Torque to 15 ft-lbs (20 N-m).
- e. Recheck all bolts for tightness.

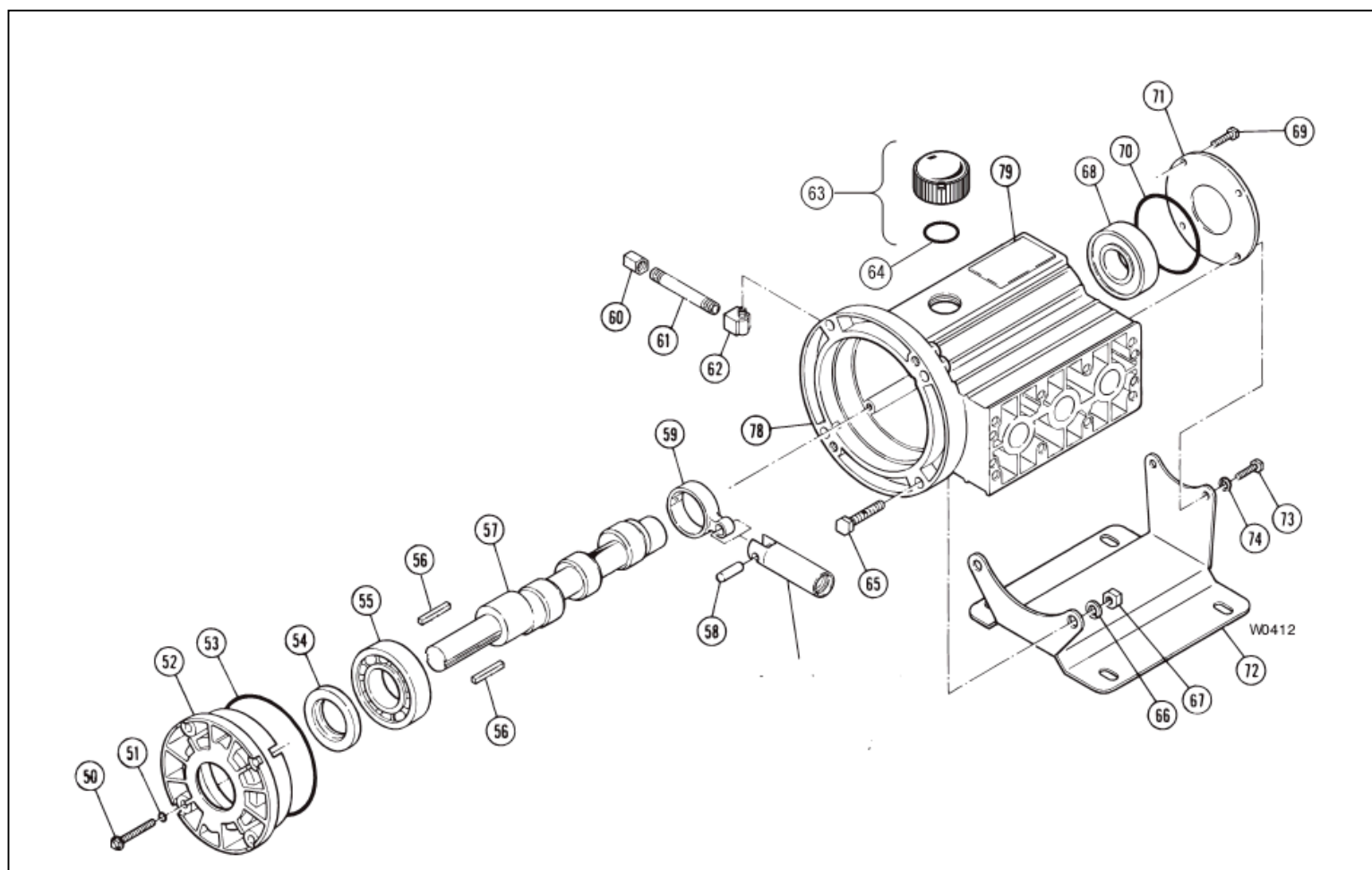
## 6. Prime the Hydraulic Cells

- a. With the pump **horizontal**, fill the reservoir with the appropriate Hydra oil for the application.
- b. All air in the oil within the hydraulic cell (behind the diaphragms) must be forced out by turning the shaft (and thus pumping the piston). A shaft rotator is included in the Wanner Tool Kit.

Turn or job the shaft until a **bubble-free** flow of oil comes out of each access hole in the diaphragm plate (18). Watch the oil level in the reservoir; if it gets too low during priming, air will be drawn into the pistons (inside the hydraulic end). This will cause the pump to run rough, and you will have to start over again with priming the hydraulic cells.

Replace the FMH screw (30) and O-ring (29) for each access hole as they are primed.

# Pump Service (Hydraulic End)



Item No.	Part Number	Description	Qty	Item No.	Part Number	Description	Qty
50	D03-086-2010	Cap Screw, hex-head, with washer	4	64	D10-080-2111	O-ring, oil fill, Buna	1
51	D25-047-2110	O-ring, back cover screws, Buna	4	65	D03-068-2010	Cap Screw, socket-head, 1-1/2"	4
52	D03-131-1000	Back Cover	1	66	D10-048-2010	Washer, 38"	4
53	D03-037-2110	O-ring, back cover, Buna	1	67	D10-087-2010	Screw, HHCS, .38-16 X 1.13"	2
54	D03-031-2110	Seal, Buna	1	68	D03-010-2910	Front Bearing	1
55	D03-011-2910	Back Bearing	1	69	D03-087-2010	Cap Screw, hex-head, 1/2"	4
56	D10-085-2210	Key, Woodruff shaft	2	70	D40-074-2110	O-ring, front cover, Buna	1
57	M03-009-1003	Hollow Shaft, 56C direct drive, 5/8" I.D. (closed-coupled), 3.0 GPM @1725RPM	1	71	D03-130-1000	Front Cover	1
58	D03-133-1000	Pin	3	72	D03-025-1010	Base Plate (for D-03 models only)	1
59	D03-132-1000	Connecting Rod	3	73	D03-089-2010	Cap Screw, hex-head, 3/4" (for D-03 models only)	2
60	D10-078-2210	Cap, brass, 1/8"	1	74	D03-050-2010	Washer, lock (for D-03 models only)	2
61	D10-077-2210	Pipe, brass, 1/8"	1	78	D03-001-1001	Pump Housing	1
62	D10-076-2210	Elbow, brass, 1/8"	1	79	D10-040-2410	Name Plate	1
63	D03-039-1030	Cap with O-ring, oil fill	1				



# Pump Service (Hydraulic End)

**NOTE:** The numbers in parentheses are the Red. Nos. on the illustrations in the parts drawings.

This section explains how to disassemble and inspect the hydraulic end (oil reservoir) of the pump.

**CAUTION:** Do not disassemble the hydraulic end unless you are a skilled mechanic. For assistance, contact Wanner Engineering (Tel 612-332-5681 or Fax 612-332-6937) or the distributor in your area.

Depending on the repair you are attempting, you may or may not have to remove the motor from a direct-drive pump/motor unit.

Internal piston components (21-27) can be serviced without removing the motor or crankshaft. The motor and crankshaft must be removed to service the connecting rod (59), piston housing (20), crankshaft (57), front bearing (68), back bearing (55), or seal (54).

## To Service pistons Without Removing Motor or Crankshaft

### 1. Disassemble Pistons

With the manifold, valve plate, diaphragm plate, and diaphragm removed, and the oil drained from the pump (see the Pump Service (Fluid End) Section):

- Remove the snap ring (27) from one of the pistons, using standard snap-ring pliers.
- Pull out the valve plunger spool (24). This also removes the washer (26) and spring (25).
- Insert a hook through the center hole of the valve cylinder (22), and pull the cylinder out of the piston. Be careful not to damage the piston.
- Inspect all parts, and replace the O-ring and any other parts that are worn or may be damaged.
- Repeated steps "a" through "d" for the remaining pistons.

### 2. Reassemble Pistons

- Tip pump so the pistons are vertical.
- Drop a ball (21) into the opening in the bottom of the piston.
- Insert a valve plunger (24) into a valve cylinder (22). Slide a spring (25) over the plunger, inside the valve cylinder.
- Slide the assembled valve cylinder, plunger, and spring (22-25) into the piston (20).
- Insert a washer (26) over the plunger.
- Insert a snap ring (27) into the piston. Use the snap-ring pliers.
- Repeat the above procedure for the other two pistons.

## To Remove Motor from Direct-Coupled Unit

### 1. Disassemble Motor from Pump

- Remove the four bolts (65) and two washers (66) that secure the pump and motor together.
- Install two of the bolts into the threaded holes in the rear of the pump housing.
- Alternately turn the bolts clockwise until the pump and motor separate.

### 2. Reassemble Motor to Pump

- Thoroughly clean the motor shaft and the hollow pump shaft. Remove the tape from the key and keyway.
- Apply a **liberal** amount of Loctite® Nickel Anti-Seize #77164 to the motor shaft and fill the pump shaft hole.
- Install the two woodruff shaft keys (56) into the keyway.
- Slide the motor shaft into the hollow pump shaft.  
**CAUTION: When assembling this pump to the direct-coupled motor, be careful that the shaft key remains in the motor shaft keyway and does not ride up the keyway and contact the shaft seals (which would cause premature seal failure). Incorrect key placement could also cause the hollow pump shaft to fail.**  
**Use a screwdriver to move the shaft key back in the motor shaft keyway as the motor and pump are drawn together.**
- Reinstall the four bolts (65) and two washers (66).

## To Service the Remainder of the Hydraulic End

### 1. Remove Pump Housing

- Remove the manifold, valve plate, and diaphragms, as outlined in the Pump Service (Fluid End) Section.
- Drain the oil from the pump housing by removing the drain plug (60)
- Stand the pump on end, with drive shaft up.
- Remove the bolts (50) that secure the back cover (52) to the housing (78). Use a 3/8 in. socket wrench (10mm on M-03/G-03 and G-13). Save the O-rings (51).
- Remove the cover and the cover O-ring (53).
- Remove the crankshaft (57) by pulling it through the connecting rods (59).

# Pump Service (Hydraulic End)

---

## 2. Remove and Replace Pistons

To remove the pistons (20), first remove the connecting rod (59) and pin (58) by pressing the pin through the connecting rod.

Reverse the process to reinstall the pistons.

Refer to Steps 5 and 6 below to replace the diaphragm and reassemble the pump.

## 3. Replace Shaft Seal

**NOTE:** Inspect the shaft seal (54) before continuing. If it looks damaged in any way, replace it.

- Press the back bearing (55) and seal (54) out of the back cover (52). Discard the seal.
- Apply a coating of Loctite® High-Performance Pipe Sealant With Teflon®, or a comparable product, to the outer surface of a new seal and the inside surface of the opening in the back cover (52) where the seal will rest.
- Press the new seal into the back cover.
- Inspect the bearing (55). If pitted or damaged, replace it.
- Apply a coating of Loctite RC/609 Retaining Compound or comparable product to the outer surface of the bearing. Press the bearing into the back cover until it rests on the shoulder the shield on the bearing must face away from the back cover.

## 4. Reassemble Housing and Back Cover

- Stand the pump on the end
- With the pistons and connecting rods in place, reinstall the crankshaft by threading it through the connecting rods.
- Reinstall the back cover, cover O-ring, and bolts (with their O-rings).

## 5. Reinstall Diaphragms

- Screw the plunger guide lifter (from the Wanner Tool Kit) into the valve plunger spool (24). Pull out to expose the cross holes in the plunger. Rotate the shaft until the piston is at top dead center.
- Remove the three flat-head screws (30) and O-rings (29) from the edge access holes in the diaphragm plate (18). Insert a 5/64" hex allen wrench into one of the holes in the diaphragm plate (18). Turn and pull the diaphragm (17) until the front cross-hole in the valve plunger spool (24) lines up and allows the allen wrench to pass through. (Don't remove the allen wrench until the new diaphragm is installed in step "f" below).
- Apply a small amount of Loctite #242 to the threads of the diaphragm screw (be sure the threads are clean).
- Set the diaphragm (17) on the plunger (24), ridge-side out. Screw the diaphragm onto the plunger.
- Hold the plunger holder, and tighten the diaphragm to 10 in.-lbs (110N-cm) of torque.
- Remove the hex allen wrench.
- Repeat the above procedure for the plungers and diaphragms of the other two cylinders.

## 6. Reassemble Pump

- Reassemble the pump as outlined in the Pump Service (Fluid End) Section.
- Fill the reservoir with fresh oil and prime the hydraulic section of the pump, as outlined in the Pump Service (Fluid End) Service Section.

# Pump Service (Troubleshooting)

---

## Cavitation

### Symptoms of Cavitation

- Excessive pump valve noise
- Premature failure of spring or retainer
- Volume or pressure drop
- Rough-running pump
- Premature failure of diaphragms

### Causes of Cavitation

- Inadequate fluid supply because:
  - Inlet line collapsed or clogged
  - Clogged line strainer
  - Inlet line too small or too long
  - Air leak in inlet line
  - Air leak in inlet line
  - Worn or damaged inlet hose
  - Too many valves and elbows in inlet line
- Fluid too hot for inlet suction piping system.
- Air entrained in fluid piping system.
- Aeration and turbulence in supply tank.
- Inlet vacuum too high.

### Drop in Volume or Pressure

A drop in volume or pressure can be caused by one or more

of the following:

- Air leak in suction line, strainer gasket
- Clogged suction line or suction strainer
- Suction line inlet above fluid level in tank
- Inadequate fluid supply
- Pump not operating at proper RPM
- Worn pump valve parts
- Foreign material in inlet or outlet valves
- Loss of oil prime in cells because of low oil level
- Ruptured diaphragm
- Cavitation
- Empty supply tank
- Excessive aeration and turbulence in supply tank
- Abrasives in the fluid
- Valve incompatible with corrosives in the fluid
- Pump running too fast
- Worn spray nozzle(s)

### Pump Runs Rough

- Worn pump valves
- Air lock in outlet system
- Oil level low
- Wrong weight of oil for cold operating temperatures (change to lighter weight)
- Cavitation
- Air in suction line
- Restriction in inlet/suction line
- Hydraulic cells not primed after changing diaphragm

- Foreign material in inlet or outlet valve
- Damaged diaphragm
- Fatigued or broken valve spring

### Premature Failure of Diaphragm

- Frozen pump
- Puncture by a foreign object
- Pump running too fast

### Water (or Process Fluid) in Oil Reservoir

- Condensation
- Ruptured diaphragm
- Hydraulic cell not properly primed after diaphragm replacement
- Frozen pump

### Strong Water (or Process Fluid) Pulsations

**NOTE:** Small pulsations are normal in single-acting pumps with multiple pumping chambers.

- Foreign object lodged in pump valve
- Loss of prime in hydraulic cell because of low oil level
- Air in suction line
- Cavitation
- Aeration or turbulence in supply tank

### Valve Wear

- Normal wear from high-speed operation
- Cavitation
- Abrasives in the fluid
- Valve incompatible with corrosives in the fluid
- Pump running too fast

### Loss of Oil

- External seepage
- Ruptured diaphragm
- Frozen pump
- Worn shaft seal
- Oil drain piping or fill cap loose
- Valve plate and manifold bolts loose
- Pump housing porosity

### Premature Failure of Valve Spring or Retainer

- Frozen pump
- Puncture by a foreign object
- Pump running too fast
- Spring/retainer material incompatible with fluid being pumped
- Excessive inlet pressure

# System Troubleshooting

## Termite Control Truck

Problem	Probable Causes	Solution
<b>Nothing Operates</b>	Battery guard tripped.	Start truck or plug in battery charger. Reset battery guard by pressing red dash button.
	50 amp main fuse.	Check/replace 50 amp fuse under the hood. Determine cause, repair/replace as required.
	Cable/wiring failure.	Check wires from 50 amp fuse, under cab, up to relays at hose reel. Repair as required.
	Power switch failure.	Test switch with ohmmeter. Repair/replace as required.
	Battery guard reset switch test.	With vehicle ignition off, press and hold the reset switch for a minimum of 3 seconds. The battery should disconnect and the indicator momentarily blinks. Press reset switch momentarily to reconnect battery. If this does not work, check the in-line 5 amp fuse.
<b>Low Flow or Pressure</b>	Ruptured diaphragm(s).	Check for low/cloudy pump oil. Replace diaphragms, oil and bleed air from pump.
	Supply tank empty/low.	Fill tank. Remove filter bowl and open tank to check flow.
	Pinched/kinked hose.	Check all plumbing hoses to make sure they are not collapsed. Completely unreel hose and remove twists/kinks.
	Pump not fully primed.	Repeat fluid end priming procedure as described in repair manual.
	Inlet plumbing air leak.	Check for loose hose fittings and missing/damaged strainer gasket.
	Clogged strainer.	Check strainer screen. Clean or replace as required. NEVER RUN WITHOUT SCREEN!
	Debris in valve(s).	Clean and flush or replace valves.
<b>Pump Does Not Run</b>	Cable/wiring failure.	Check all wiring and connections. Clean or repair as required.
	Pressure switch.	Check wiring connections inside pressure switch box. Replace switch as required.
	Faulty motor.	Check wiring/connector. Test motor by connecting to a 12 volt battery. Replace if required.
<b>Pressure Gauge Reads Too High</b>	Pressure switch set too high.	Readjust to the correct pressure (see pressure switch adjustment paragraph in the operation section) or replace switch.
	Frozen gauge.	Freezing can cause incorrect high pressure reading. Replace gauge.
<b>Hose Reel Does Not Run</b>	Cable/wiring failure.	Check all wiring and connections. Clean or repair as required.
	Switch failure.	Check switch connections. Test switch with ohmmeter. Repair/replace as required.
	Solenoid failure.	Check solenoid connections. Test and replace as required.
	Motor failure.	Check wire connections. Verify (with voltmeter) voltage at motor. Replace as required.

## Rear View Monitor

Problem	Probable Cause	Solution
<b>No Power</b>	Low battery voltage	Start truck or plug in battery charger.
<b>Screen</b>	Too bright.	Adjust brightness or contrast. Pressing RESET will change back to default settings.
	Color tint.	Adjust TINT. Pressing RESET will change back to default settings.
	Colors are dim.	Decrease color adjustment in menu mode.

# System Troubleshooting

## Digital Fluid Counter Programming

Use the following procedure to check or reset programming for the three digital fluid counters. See illustration.

1. Check (or set) sensor that penetrates housing of pump motor. See illustration.
  - a. Loosen lock nut.
  - b. Gently turn sensor clockwise until it bottoms out.
  - c. Turn sensor one half turn counter clockwise and secure it in that position with lock nut.
2. Reach behind fluid counter module and feel for toggle switch on top of module.
3. Move toggle switch to position that is **away** from wires.
4. Display on all three fluid counters should now be zeros or zeros and numbers (not gallons as before)
5. When correctly programmed, each of the three displays show: "00.0102" on screens (after moving toggle switch as in step 2 above).
  - a. If any display is not reading "00.0102", use RST (reset) button (lower right, below display window) to change each digit to correct number. Each time RST button is depressed, digit will advance to next higher number (0 through 9).
  - b. Use triangle button (lower left, below display window) to move from right to left through each digit of display. Set each digit to correct number using RST button.
  - c. Perform steps 5a. and 5b. for any displays that do not read "00.0102"
6. Once all three displays are reading "00.0102", move to next screen (on each fluid counter) by holding down triangle button and depressing RST button once. Each of these displays should read "0000.000".
  - a. If necessary, correct each display to read "0000.00" following steps 5a., 5b., and 5c. above.
7. Advance to third screen (on each fluid counter) by holding down triangle button and depressing RST button once. Each of these displays should read "000000".
  - a. If necessary, correct each display to read "0000.00" following steps 5a., 5b., 5c., above.
8. Advance to the fourth screen (on each fluid counter) by holding down triangle button and depressing RST button once. Top two displays read "R", bottom display read "No R".

Sensor Location



Digital Fluid Counters



JOB TOTAL

DAILY TOTAL

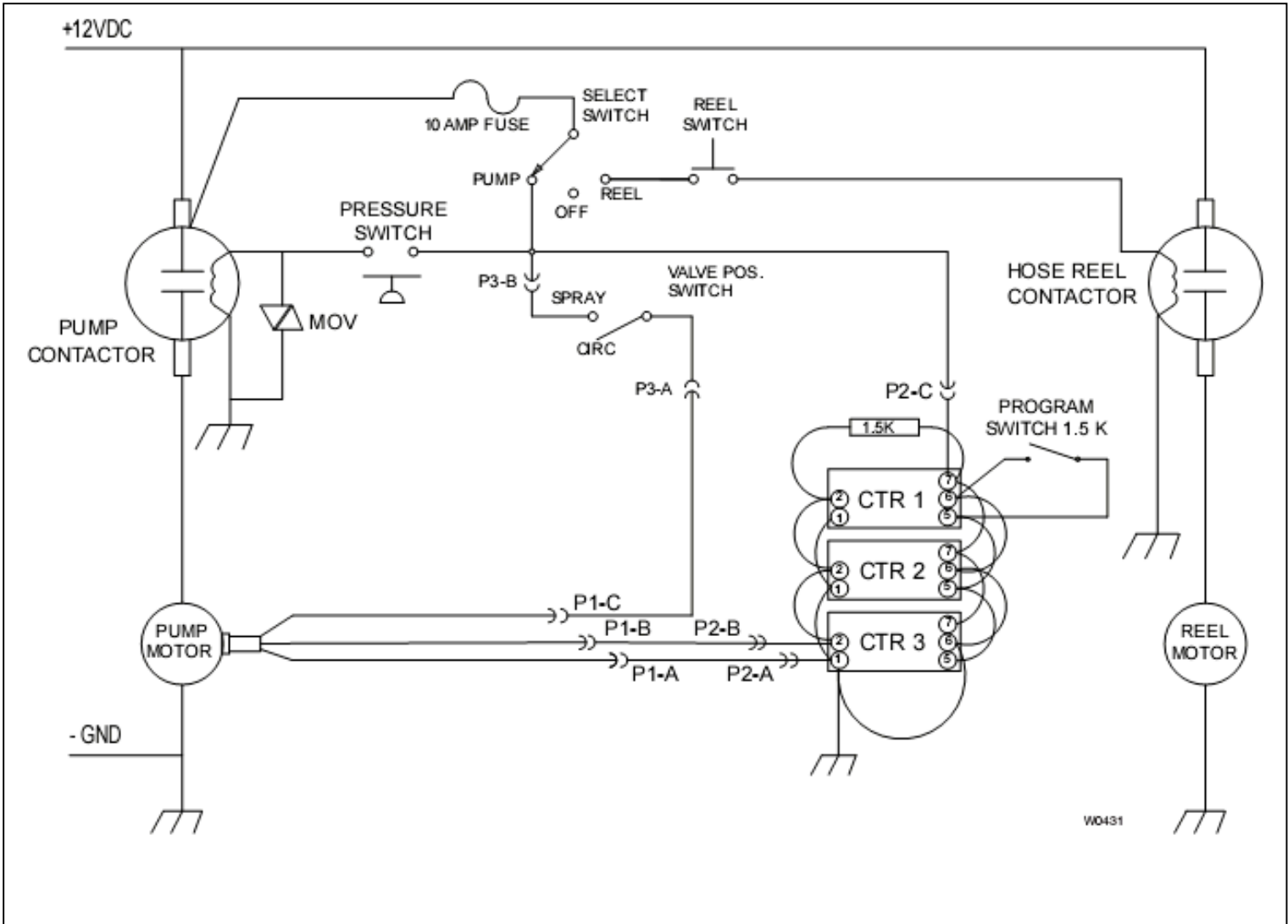
TOTAL

Programming is now complete.

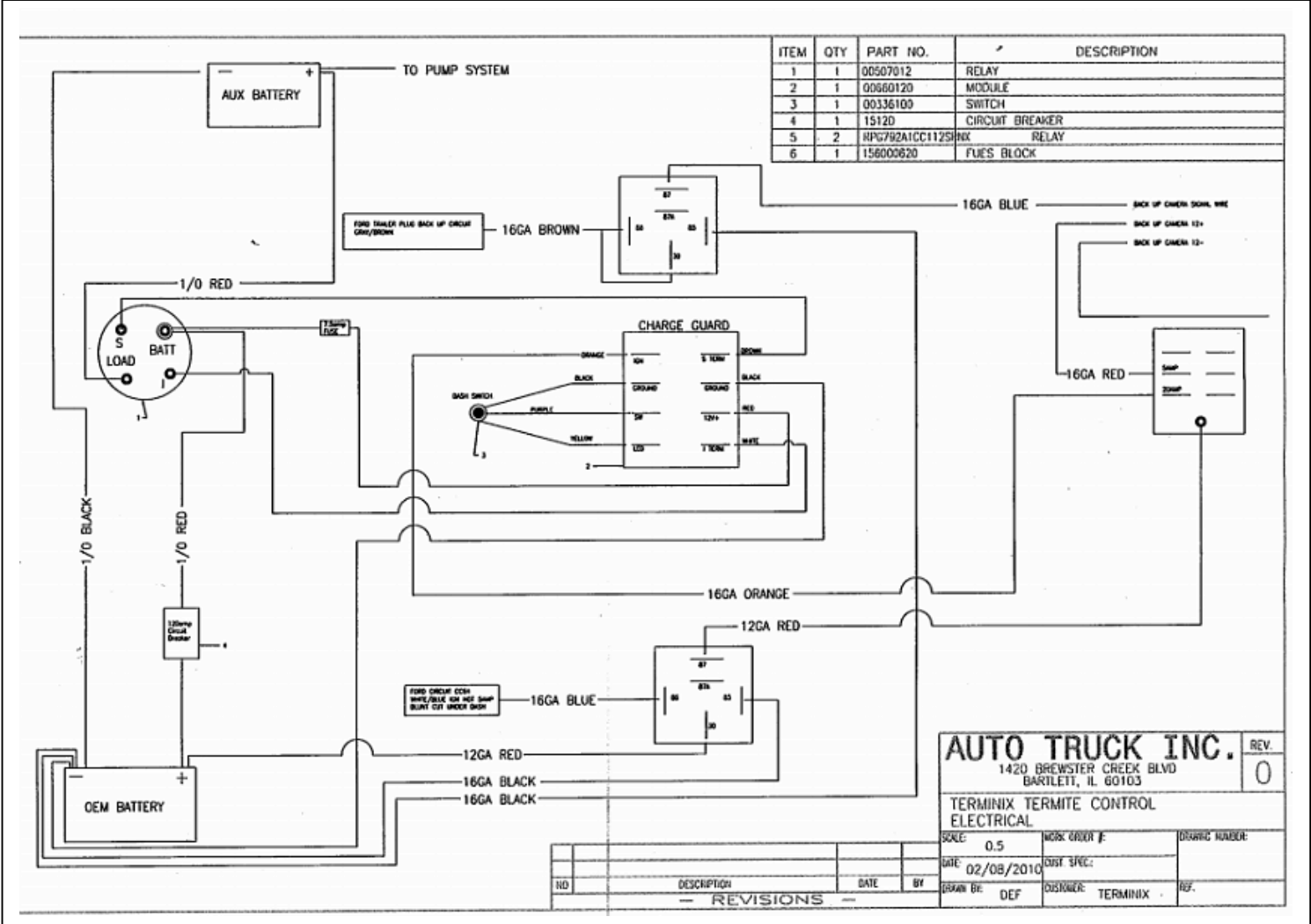
1. Move toggle switch **toward** wires.
2. Run pump in circulate mode for several minutes to warm up system.
3. Switch pump to run mode and dispense mix through treating tip back into tank. Do this for several minutes to purge any air from hose.
4. Reset top two fluid counters to ZERO, and record reading on bottom counter.
5. Dispense mix into calibrated container (two to four gallons is adequate).
6. Compare known, dispensed amount with readings on counters.



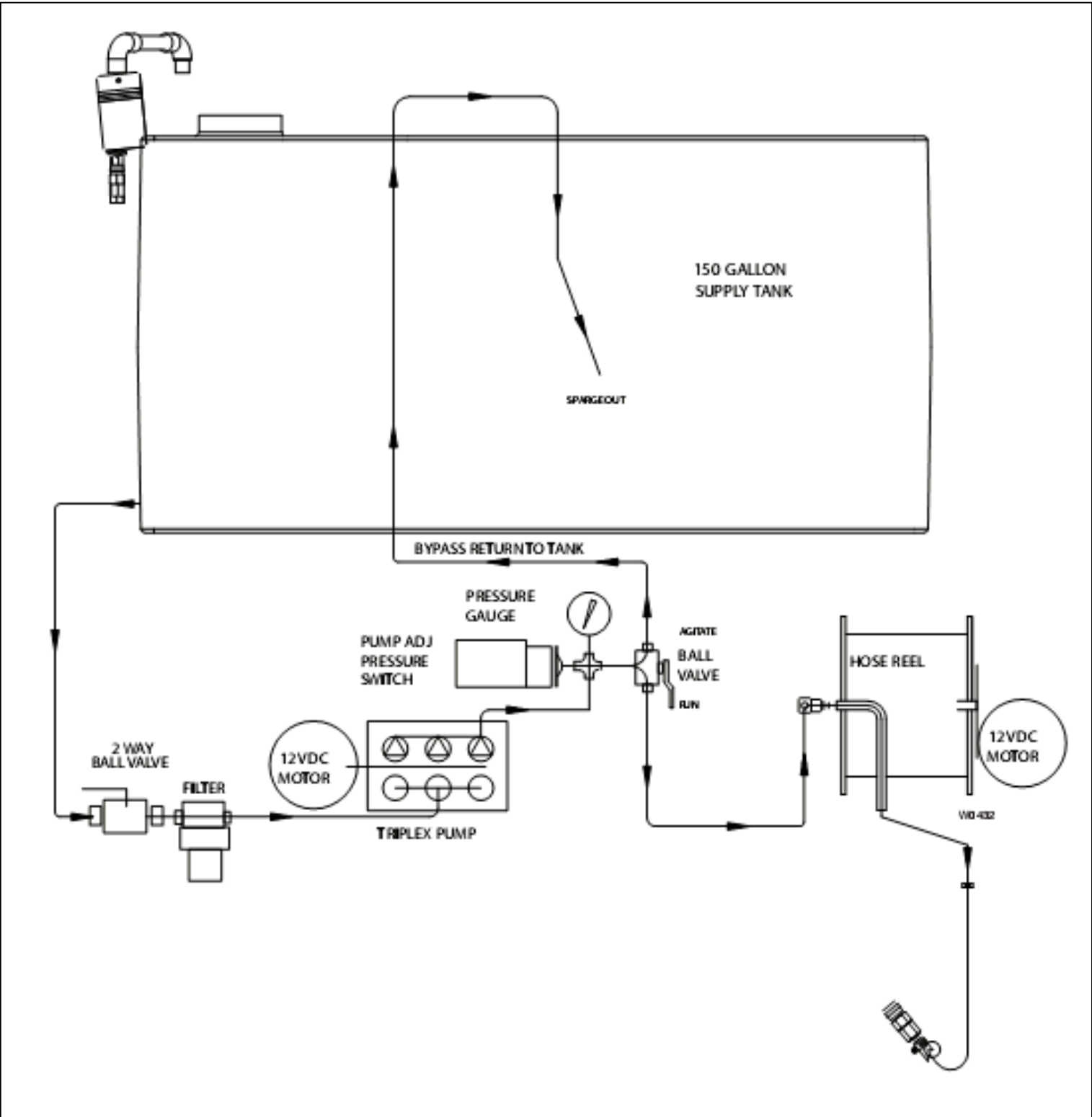
# System Wiring Schematic



# System Wiring Schematic



# System Plumbing Schematic



# Specifications

## Power Requirements:

Volts.....12 to 16 VDC  
Amps.....18 DC nominal  
(fused @ 50 A)

**Flow Rate**.....2.0 GPM (7.5 lpm) max

**Tank Capacity**.....50 gallons (189 liters)

**Working Pressure**.....150 psi max

**Working Temperature**.....140° F max

**Min. Operating Temperature**.....35° F

**Storage Temperature**.....140° F max

**Weight (dry), with tanks**.....3,820 lbs max

**Size (module)**.....87 X 54 X 27 in.

## Wetted Materials in System Components:

Acetal  
Brass  
Buna-N-XS  
Celcon  
EPDM  
Elgiloy  
Kydex  
Neoprene  
Nylon  
Polyethylene  
Polypropylene  
Polyurethane  
PVC  
Stainless steel 17-4  
Stainless steel 17-7  
Stainless steel 18-8  
Stainless steel 302  
Stainless steel 304  
Stainless steel 316  
Stainless steel 440C  
Teflon

# Replacement Parts

## General

**NOTE:** The parts listed on the following pages are ordered from various “sources,” which are identified in the parts listings:

- **Wanner.** Contact Customer Service at Wanner Engineering:  
E-mail: kshroer@Wannereng.com  
TEL.: 612-332-5681  
FAX: 612-332-6937
- **Glasstite** For topper assembly problems, contact Glasstite, at:  
TEL.: 800-533-0450 ext. 179  
FAX: 507-695-2980
- **Fab Metals.** For hose reel problems, contact Fab Metals at:  
TEL.: 937-845-300  
FAX: 937-845-8115
- **Auto Truck Group Louisville**  
  
TEL: 502-489-5480  
FAX: 502-489-5085

## System Identification

The System is identified by the pump's serial number. Refer to the Illustration on page 13 for location.

### IMPORTANT

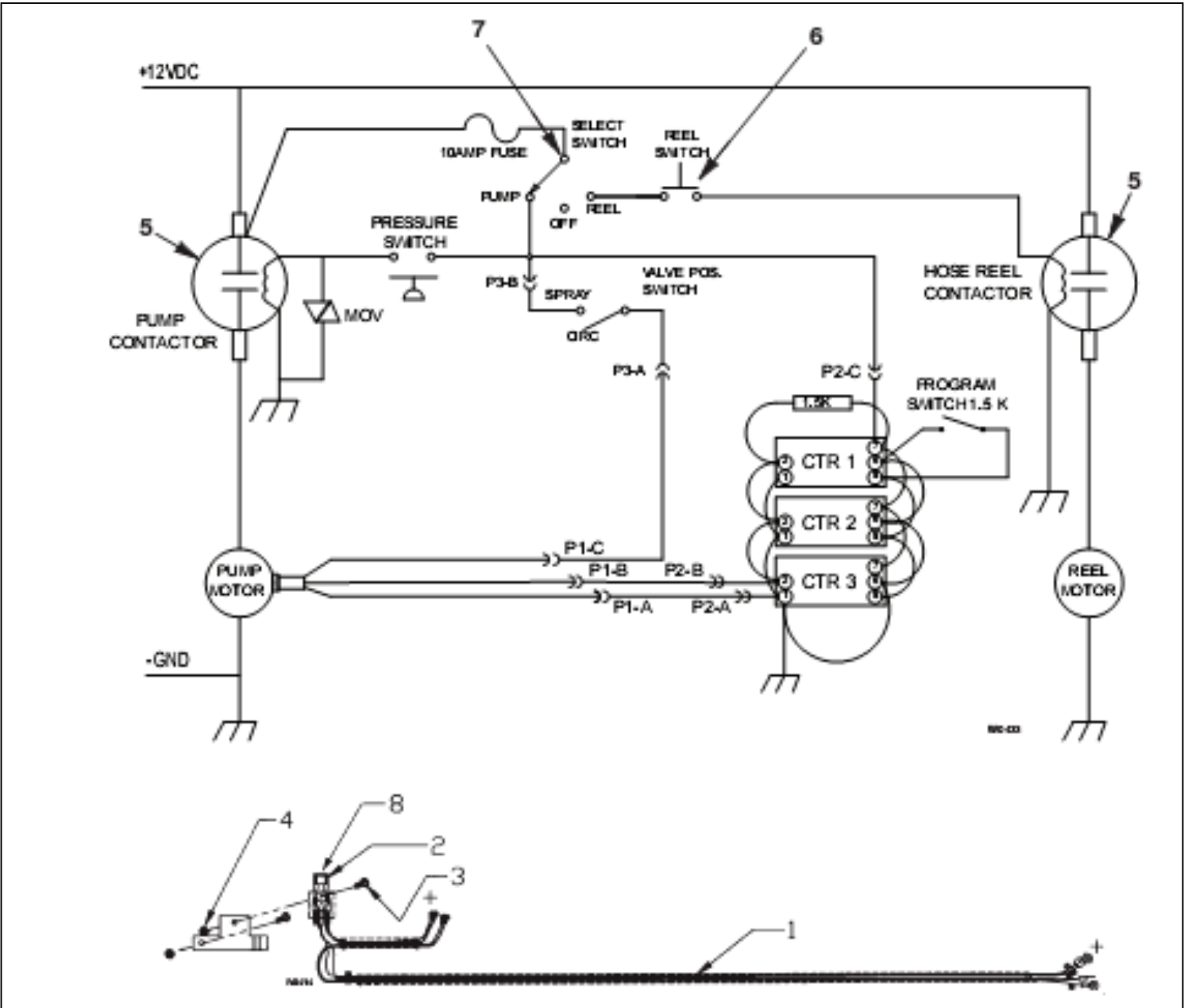
**Questions?** If you are in doubt about the correct part number to order, contact Customer Service at Wanner Engineering, TEL. 612-332-5681 or FAX 612-332-6937.

**Serial No.** You may be asked for the serial number of your unit. The illustration on page 13 shows the location of the Serial Number Plate.

# Replacement Parts

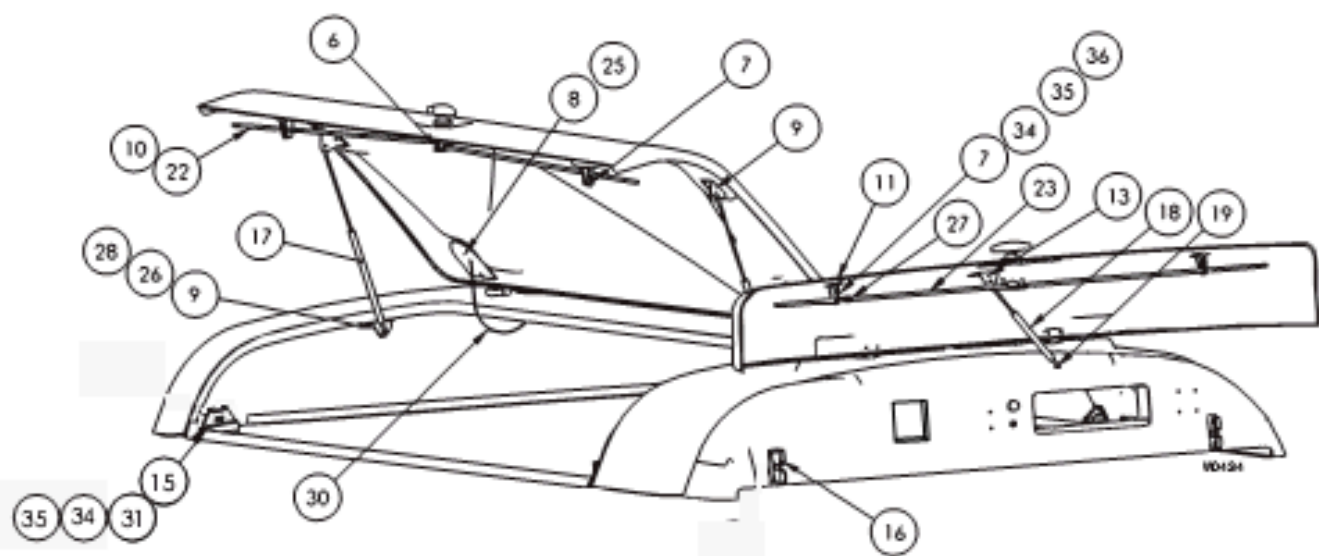
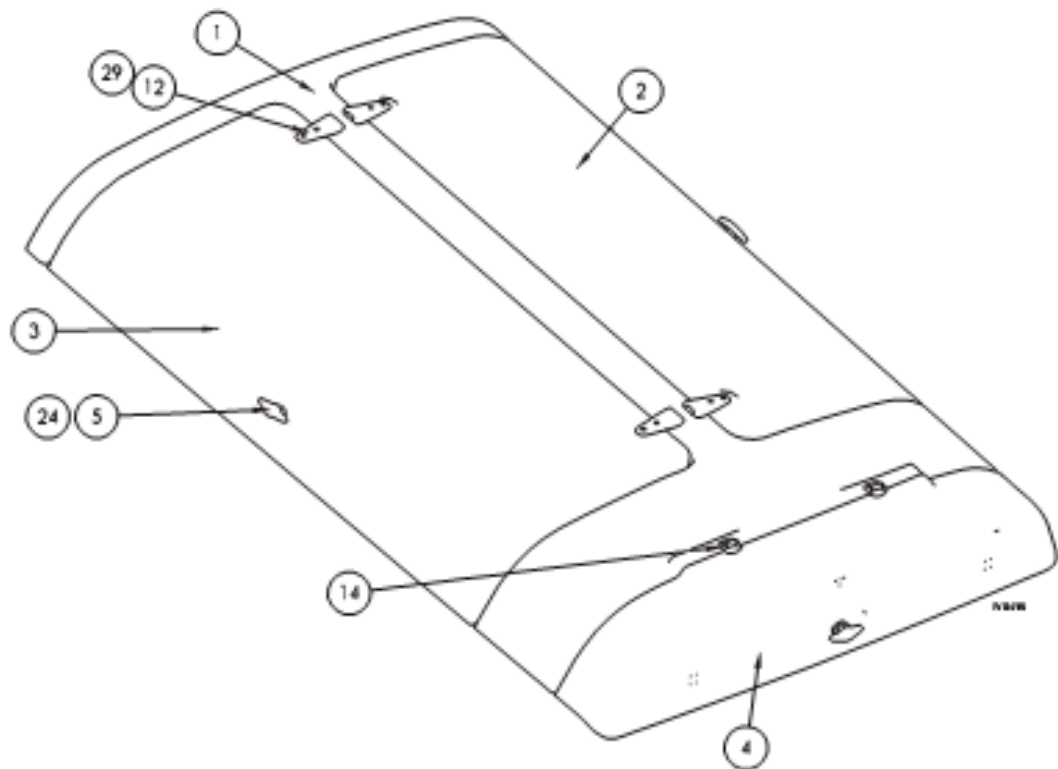
## Electrical System Parts

Item No.	Part Number	Description	Qty
1	161-013	Harness, Power	1
2	102-183C	Fuse, 50 Amp	1
3	100-660C	Screw, PHMS, 10-32 X .50	1
4	100-922C	Nut, Nylock, 10-32	1
5	145-040C	Contactor, Solenoid, 12 VDC	2
6	145-041C	Switch, Push button	1
7	145-023C	Switch, Select, 3 position	1
8	161-038C	Label, Fuse	1
9	100-663C	Washer, Flat, .28 ID	1



# Replacement Parts

## CAPTERMITE - Topper Assembly





# Replacement Parts

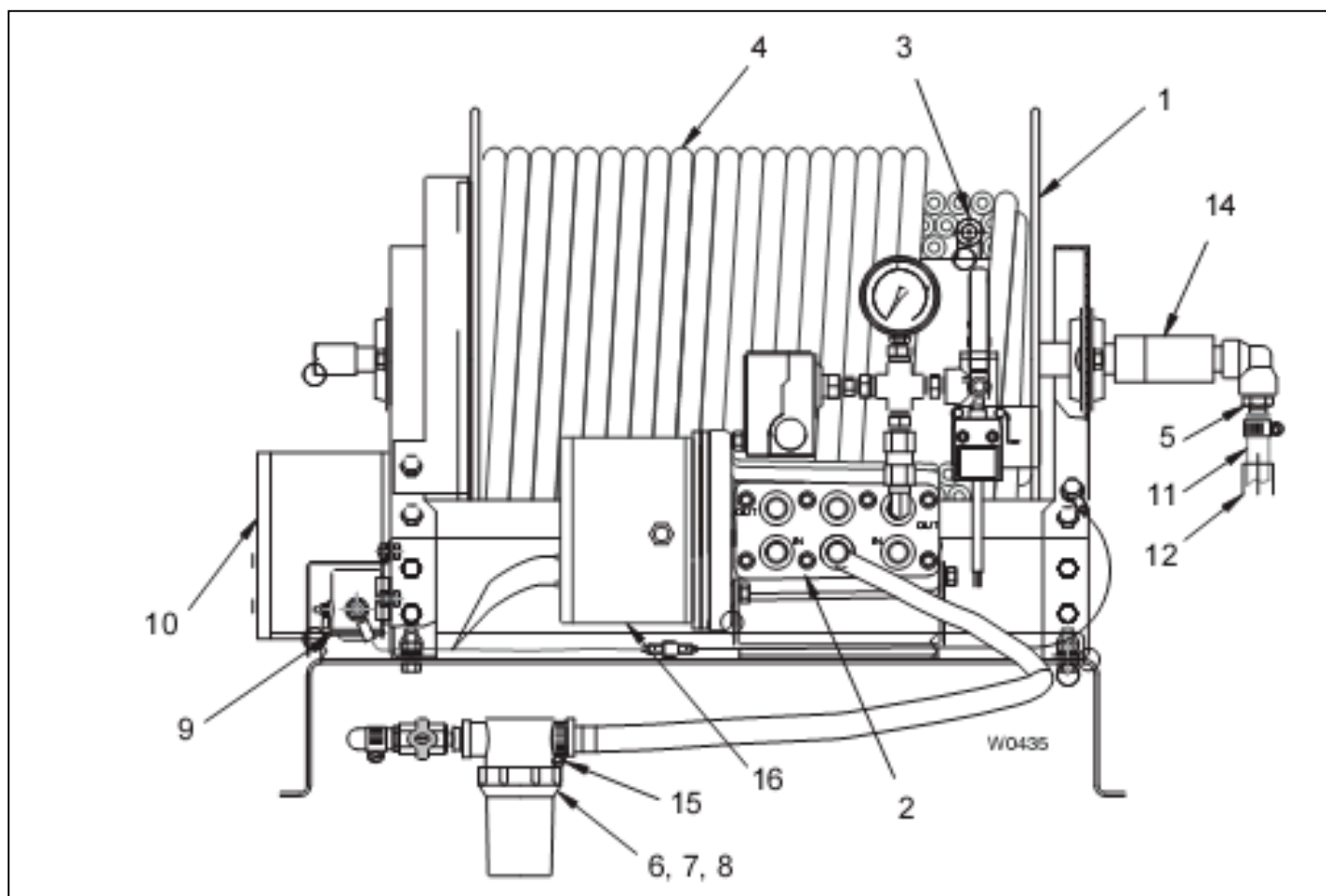
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## CAPTERMITE -Topper Assembly

Item No.	Part Number	Description	Qty
1	161-088	Frame, topper	1
2	161-075	Door, passenger's side, topper	1
3	161-076	Door, driver's side, topper	1
4	161-077	Door, rear, topper	1
5	161-084	Handle, door, lock	3
6	161-085	Cam, door, topper	2
7	145-069	Rod Guide, adjustable	4
8	145-090	Plate, hinge support	4
9	161-067	Bracket, gas prop, side door mounting	8
10	161-083	Screw, #12 X ¾", hex-head, slotted	16
11	161-070	Shim, rod guide, rear	2
12	145-036	Hinge, strap	4
13	161-089	Bracket, gas prop, rear door mounting	1
14	145-067	Hinge, spring, 115°, detented	2
15	145-036	Bracket, latch	4
16	161-089	Slam Latch	2
17	161-065	Gas Prop, 40 lb., side door	4
18	161-066	Gas Prop, 40 lb., rear door	1
19	161-069	Ball Stud, gas prop, rear door	1
20	161-071	Gasket Set, rear door, ½" "D"	AR
21	161-072	Gasket, side door, ½" "D"	AR
22	161-078	Rod, 37", side door, topper	4
23	161-079	Rod, 29.5", rear door, topper	2
27	161-090	Spring Assembly, collar and set screw	4
30	161-049	Lanyard, safety	2
31	161-093	Screw, #10 X ¾", Phillips-head, flat	4
34	161-096	Washer, #10, flat	4
35	100-655	Nut, 10-24, Nylock	8
36	161-128	Bolt, carriage, 10-24 X 1"	6
37	161-087	Trim Lock Seal, ¾" bulb, ½" lock	AR

# Replacement Parts

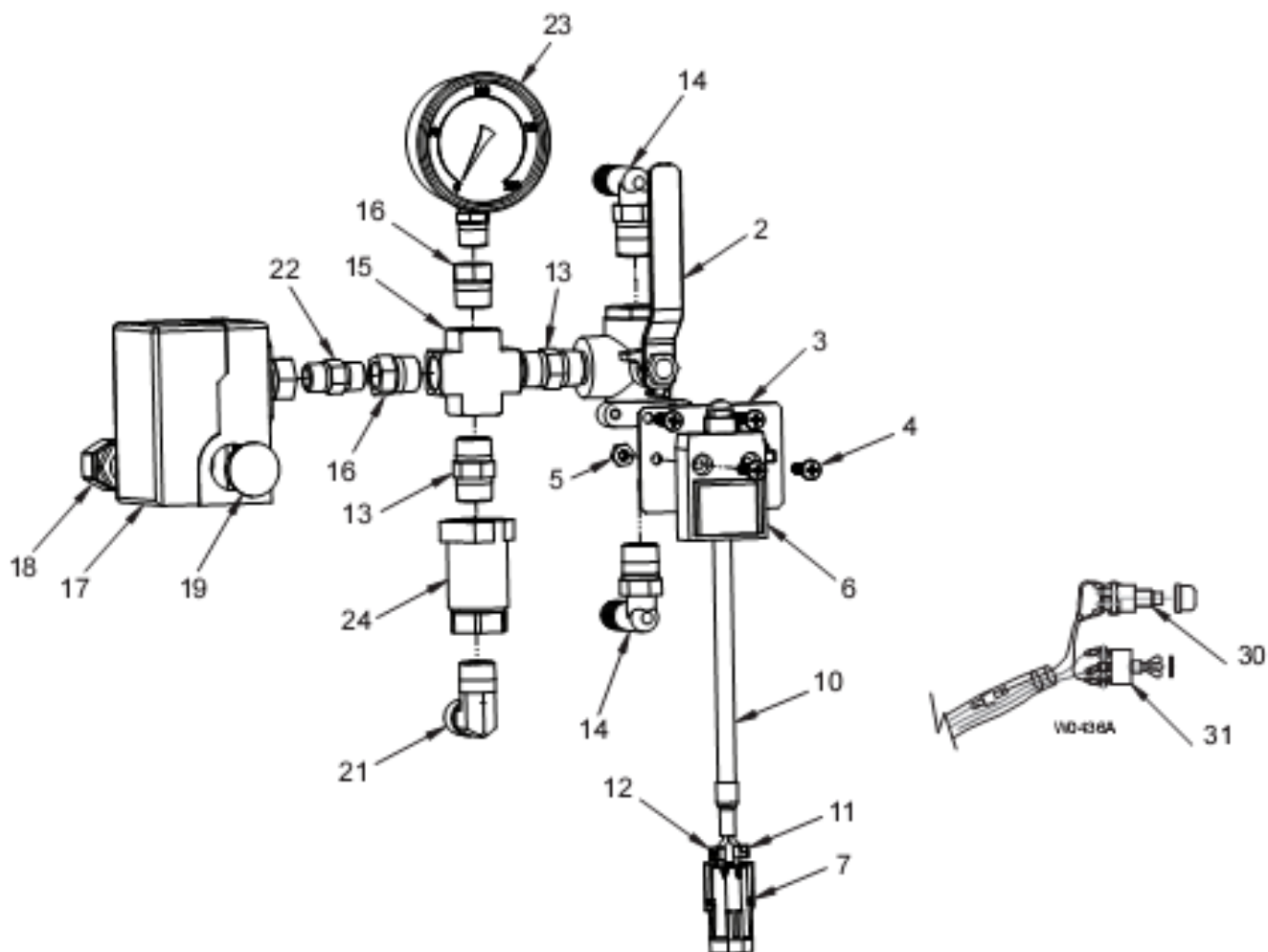
## 188-700C Pump Module



Item No.	Part Number	Description	Qty
1	186-510C	Reel, hose	1
2	M03C6400003	Pump, M03 Kel-Cell	1
3	103-017	Barb, .50 MPT X .38 HB, Brass	1
4	145-042C	Hose, .38 ID X 300 ft (treating hose)	1
5	102-084C	Barb, .50 MPT X .50 HB, SS	1
6	186-531C	Filter Assembly	1
7	100-121	Cage, Filter (not shown)	1
8	100-139	Gasket (not shown)	1
9	145-040C	Contact, Solenoid, 12 VDC	2
10	100-990	Motor, Pump & Reel, 12 VDC	2
11	100-066C	Hose, EPDM, .50 ID (tank-to-pump hose)	AR
12	100-780C	Loom, .625 Dia, (bulk, per foot)	AR
13	D03C64K0001	Kit, Diaphragm Replacement (not shown)	
14	186-512C	Swivel, Hose Reel	1
15	100-239	Clamp, Filter	1

# Replacement Parts

## 188-550 Pump Control Assembly

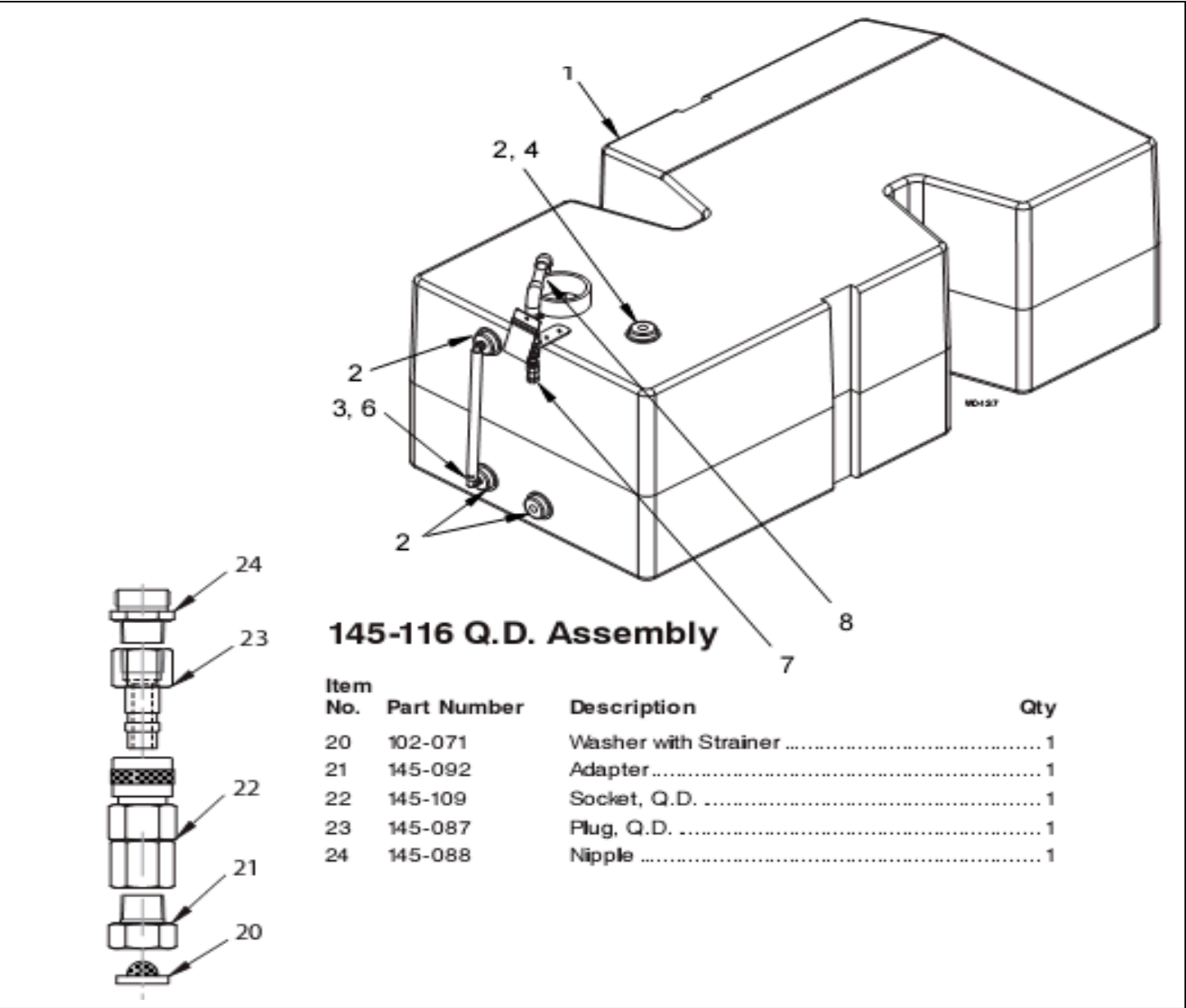


Item No.	Part Number	Description	Qty	Item No.	Part Number	Description	Qty
1	162-332C	Valve, Ball	1	14	102-180C	Gage, Pressure, 200 psi	1
2	162-333C	Switch, Bracket	1	15	186-551	Valve, Check, Brass, .38 FBE	1
3	186-552C	Screw, PHMS, 10-24 X .75 lg	2	20	100-800C	Clamp, Hose, .38 ID	2
4	186-553	Coupler, Brass, .38 NPT	1	21	145-095C	Barb, Brass, .50 MP X .38 HB	1
5	103-160C	Nipple, Brass, HHCS, .38 NPT	1	22	145-109C	Socket, Brass, q.d., .50 MP X .65 dia stu	1
6	100-834C	Elbow, Barb, Nylon, .38 MP X .50 H	2	23	145-087C	Plug, Brass, q.d., .50 MP X .65 dia stud	1
7	186-530C	Cross Fitting, Brass, .38 NPTF	1	24	145-094C	Nipple, Application, .38	1
8	103-011C	Bushing, Brass, .75 MP X .38 FP	2	25	145-114C	Gun, Application	1
9	162-327C	Switch, Pressure	1	26	145-093	Socket, Brass, q.d., .25 MP	1
10	162-336C	Strain, Connector	1	30	145-041C	Switch, PB, NO	1
11	162-335C	Plug, Hole, .875	2	31	145-023C	Switch Toggle, three position	1
12	102-203C	Elbow, Brass, .38 MPT-BE	1	32	186-545C	Spray Wand Assembly, 18 in.	1
13	102-068C	Nipple, Brass, .25 NPT	1				

# Replacement Parts

## 188-305C Tank Assembly

Item No.	Part Number	Description	Qty
1	186-300C	Tank	1
2	100-048	Bulkhead	3
3	186-314C	Ball, Float (Sight Gage)	1
4	102-206C	Elbow	3
5	102-049	Tee	1
6	100-833C	Barb, Hose	2
7	145-116	Q.D. Assembly	1
8	161-024	Tank Fill Assembly	1
	100-027	Tank Cap	1
	186-313C	Agitator, Booster	1



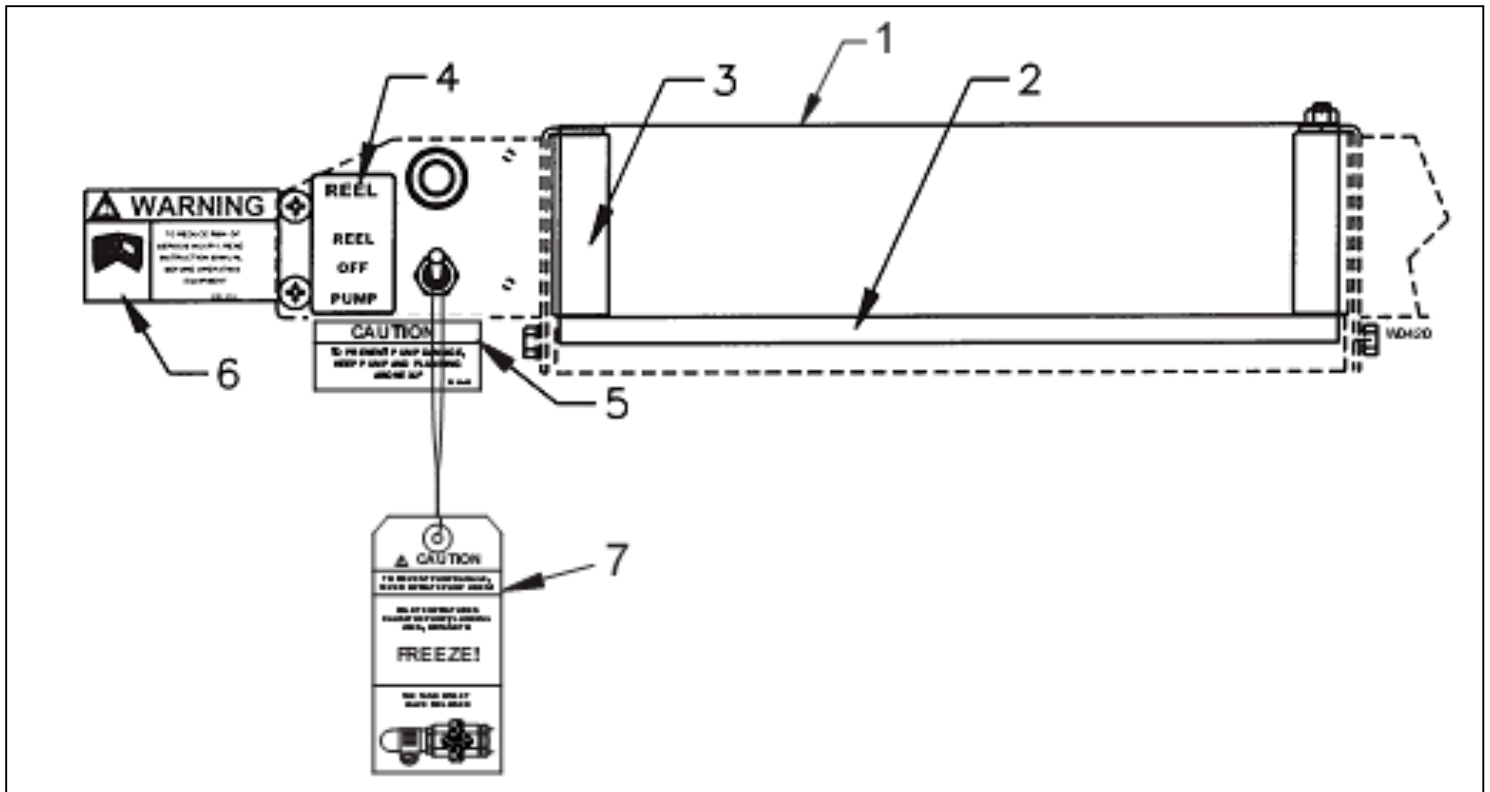
### 145-116 Q.D. Assembly

Item No.	Part Number	Description	Qty
20	102-071	Washer with Strainer .....	1
21	145-092	Adapter .....	1
22	145-109	Socket, Q.D. ....	1
23	145-087	Plug, Q.D. ....	1
24	145-088	Nipple .....	1

# Replacement Parts

## 145-008 Hose Guide Assembly

Item No.	Part Number	Description	Qty
1	145-008	Assembly, Guide, complete	1
2	145-010	Roller, Nylon, 14"	1
3	102-081	Roller, Nylon, 3"	2
4	145-024C	Label, Pump-Off-Reel	1
5	186-603C	Label, Caution	1
6	102-151C	Label, Warning	1
7	186-602	Tag, Caution	1



# Replacement Parts

